Adversaria.

1782 –

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kness of parts renders them liable to dis-ease do. 69
unds of the joints why dangerous — 112 + 120.

Begun Edinr. Jan.y 12th. 1782 –

Is the cause of Fever or are contagions in general sedative or stimulant? Dr Cullen assumes the former as a proposition almost self-evident, (see his first lines) but others think it not only doubtful but false. To this they are led 1st. By analogy. In small pox, measles & gonorrhoea &c. there is an obvious inflammation proceeding from contagion. 2dly When infection is taken up by a lymphatick on the surface as by wounds in dissecting &c similar accidents the parts inflame a red line follows the course of the Lymphatick & the neighbouring gland swells out. To these Argts. tis opposed 1st. that debility is in general the first effect of contagion, as ex. gr. in the beginning of the cold stage of fevers; that sometimes the contagion operates so powerfully ~~&c~~ as suddenly to diminish or

2 even to destroy the moving powers as ex. gr. in the beginning of Typhus where after receiving the infection the patient is sometimes unable to walk, & in opening Bales of infected cloth or other fomites people have been sometimes suddenly struck down dead. — 2dly a wound tho' inflicted w.th a common needle free from infection exhibits the same phænomena as when inflicted by a knife ting'd w.th putrid matter; consequently the phænomena of inflammation are to be referd not to the stimulant nature of contagion but to the wound. No matter can be produced at or absorbd from the wound because the symptoms of inflammation come on sometimes in 6 hours after the receiving

wound is inflicted. This is the observation of Cruickshank. —

Dr. Monro affirms that the quantity of blood in the head is always entirely or nearly the same. To this he is led by considering the incompressibility of the Brain. This prevents the blood vessels from being distended beyond a certain point; if the blood comes in slowly it goes out so too, & v. v. the symptoms in phrenitis depend on the excited action of the vessels more than the increased quantity of fluid circulated, & the symptoms of congestion & plethora so often mentioned arise from an extravasation which preying more on one part of the brain than is done on the rest, produce the evils complained of. This doctrine

it is so obscure that it produces annually some letters begging an explanation. The Dr allows there may be a little more at one time than another but not above a tea-spoonful. Before this can be admitted 2 things must be proved besides the absolute incomprehensibility of ye brain, viz 1st That the arteries of the head ought necessarily be always dilated to a certain point; & 2dly That beyond this point they have no room to expand themselves, for that every artery if not confind by a firm substance is capable of dilatation none will deny. Neither of these is as yet proved, & therefore I cannot be perswaded that in Syncope & delirium from phrenitis or drunke-

ness the quantity of blood in the vessels of the same brain differs but by a tea-spoonful. —

The blood is conveyed to the brain in the most cautious manner. To prevent the bad effects of accidental obstruction every branch of every artery anastomoses with its fellow. Hence the uniting branches of the carotids around the basis of the Cranium forms the circle of Willis. Hence the beautiful net-work every where visible upon the dura mater. By the winding course & oblique ~~or~~ embrace ~~of~~ ~~cations~~ the arteries the impetus of the blood is considerably diminished. Some have affirmed that the arteries of the brain had no pulsation lest that important organ should be injuri-

6 but this seems false, as appears from the prints on the bones & many other circumstances. One of the arteries indeed passes thro' a canal of bone viz the petrosal, but the pulsation may exist on either side of this screw canal, altho the artery within were firmly glued to the bone. This said Dr Monro appears from an Expt. An artery was cut & a part taken away. Below the section the pulsation stopp'd; but upon inserting a metal tube, not only the circulation but the pulsation was restored. N.B. This however is not a case quite in point. For a tube thus inserted being moveable the motion of the superior part of the artery might be me-

chanically communicated to the inferior part, whereas an osseous canal is immoveable. — Posture is of much consequence as to the circulation in the head during the disease. When Syncope comes on after evacuation or other causes the horizontal posture often removes it. An erect one is serviceable in Phrenitis. — The Dr. recommended an erect posture in a case of suspected Hydrocephalus but does not say with what effect. —

There is something peculiar in the veins of the head. The large ones are so defended by the dura mater that they are not liable to be compressed by the weight of the brain in the varying postures of the body. The small ones instead of

running directly down to the superior cava run backwards & upwards & empty their contents into the nearest Sinus. —

A patient from Glasgow saw tolerably well when he sat erect, but on stooping he thought he saw Lightning darting from his eyes, & something red was also perceiv'd by one looking into his Eye. This, Dr Monro supposed, proceeded from an effusion of red globules into the aqueous humour. While the body was erect, these by their gravity lay quiet at the bottom of the ciliary processes with being visible either to the patient or bye standers, but on stooping they ascended, became visible to others & by passing before the Iris produced the sensation of something like Lightning. Nothing was done, but they were left for

absorption. - This as well as the actual effusion of red blood when the Iris is wounded, shows a circulation of red globules there. The Dr. knew a case in which the Pupil dilated on the approach of a Candle & contracted when it was withdrawn. The Panot professes the power of contracting the Pupil at pleasure. When provoked or delighted he expresses his emotion ~~by~~ in this manner. This shows the power of the living principle over the Iris & perhaps it may be the same in man & other animals among whom it is considered as an involuntary muscle. -

The pigmentum nigrum is designed to suffocate the rays. Were the scleroticks coat immediately under the retina there would be a reflexion from the diff.t bright points on its surface pro-

during indistinctness & confusion. The pig^m. tho' generally black yet varies in diff^t. tribes. Among ruminant animals tis green; among beasts of prey tis white, because as they are forced to hunt during the night the dim light needs the aid of reflexion; & in the white rabbit tis altogether wanting. This deserves further enquiry. — Swedenborg accounts for apoplexy after surfeits thus; The Stomach being immoderately distended with food presses on the descending aorta so as to prevent the blood from passing. Hence tis accumulated about the superior extremities producing among other diseases apoplexy. — He illustrates this by an experiment. He tied up the ~~inf~~ trunk of the descending aor-

a. The contortions of the animal quic-
kend the circulation in the veins of
the lower Extremities while not a
drop could flow back to them; then
mox orebantur summa anxietates;
cor celerrime palpitabat; oculi pro-
minebant sanguine suffusi; lingua
sanguine turgida extra os promine-
bat; ingens copia spumae circa os
colligebatur, et brevi moriebatur
animal". —

Is the Angina pectoris of Dr. Heberden &
McBride a distinct disease or is it only
a peculiar modification of asthma?
The manner of attack, being sudden
& unlike that of asthma; the conti-
nuance of it without the more pecu-
liar to the other; & the solution of it
being sudden & attended with no in-
crease of Expectoration, there all were

to mark a distinct genus of disease
on the other hand, it resembles in
many respects the arthritick ast^
after continuing some time it has been re-
lieved by a regular gouty paroxy^
& the same remedy is recommended
at Stockholm, viz Tinct. Guaiacina as
being efficacious in both. Many of
the patients too are either subject
to gout themselves or descended from
gouty ~~persons~~ parents. To this tis objected 1st.
often no predisposition to gout can
be traced; that the retrocedent gout
is never so regular in its mode of
attack as the angina pectoris, & that
in this last, all the Complaints of
the stomach & intestines so constant-
ly attending retrocedent gout are

wanting.- It seems therefore to be a disease of a spasmodic kind arising from weakness.- It cannot be always call'd palpitatio cordis tho' this symptom is often present; & that there is not always an organick affection of the heart Dissection clearly shows.- Sometimes no affection of the heart is found; Sometimes 'tis enlarged or contracted beyond wt. is natural & sometimes there are internal ulcers.- But 'tis often difficult to say whether these morbid affections be the causes or consequences of the Disease.

I have heard of two Cases in which Dropsy was cured by Laudanum. The patients were both examind by the Surgeons of New Castle Hospital & declard to be drop-

sical. They went home refusing to be tapped. As they were in great pain & nearly desperate, two good Ladies gave them 30 drops of Laud.m in a glass of port wine once or 2.ce a day. The young patient was entirely cured; the old one was relieved & died some time after of an inflammatory fever. — Further Enquiry. —

Can putrescency ever exist in the living animal body? — While the humoral pathology flourished this question would have been thought impertinent, but at present tis not only proposed but answered in y.e negative. It is said that any degree of putrefaction is inconsistent with the health or life of any animal; that the peculiar smell of the faces sweat &

herspiration in certain diseases com-
monly called ~~inflammat~~ putrid depends not
on any actual putrescency or putre
faction but on a peculiar action of
the vessels; that this smell is like that
issuing from dead animal matter no
otherwise than that 'tis disagreeable;
& that the quick putrefaction of bodies
dying of such diseases is not to be
regarded since the bodies of such as
are struck dead with lightning or of
such as die suddenly putrefy still
sooner. — To this 'tis objected that the
smell of bodies in certain diseases is
altogether like that of dead animal
matter; that blood drawn then does
not coagulate & putrefies much sooner
than blood drawn in other circum-
stances; that the stomach will then

bear a much greater quantity of acids & other similar substances than it could do at another time, & that the body really does putrefy sooner after such diseases as are commonly call'd putrid than after others. The objections only show to us that in certain cases from causes to us unknown putridity takes place as soon as in such disorders. J. Hunter says that in the case of sudden death or death from Lightning, Life is every where destroyd at once. Hence the quickness of putrefaction. again, since in these cases the fluids are not dissipated as in tedious diseases, the minute vessels are every where full, & this will also promote pu

refaction. — Adhuc sub judice. —
That putrefactiveness really exists seems pro-
bable from the rapidity with which
when begun the putrefaction spreads.
A man of a bad habit of body was
brought to our Hospital with a limb
fractured that very morning. In the
afternoon the livid appearance spread
& that night he died. Here the pu-
refaction proceeded more quickly
than if the Limb had really been cut
off. Mr Madder a Stud.t who died of ty-
phus from infection in less than 24
hours tho' lying in a cool room, be-
came black all over & smell'd so
horrible that the undertakers could
hardly enter the chamber. —

Turelen mentions the case of a healthy woman who on being suddenly terrified was seiz'd instantly with a tumour of the Mamma wh. notwithstanding the use of every remedy was hardened into an indissoluble Schirrus an verum est.

Galen was admonish'd in a dream to open an artery between his fore finger & thumb; he did so & allowed the blood to flow ad Deliquium for so he was order'd. In consequence a violent pain which had long continued in illa maxime parte fixus, qua jecur diaphragmati commutatur, subito extinctus. Another cutting his ankle accidentally bled copiously & so was freed from a very tedious & severe pain of hip.

Inflammation of the Eyes is sometimes produced by imitations so minute as

to escape our notice. An invisible particle of iron or steel has continued for months & after every remedy has been tried in vain the Loadstone has extracted it. Morgagni mentions a case where the film of a fly's wing glued to the eye produced an opthalmia incurable till the film was removed. – Cases have been known in which the morbid sensibility of the Eye has been extremely increas'd & the light perfectly intolerable altho' no external inflammation appear'd. Here therefore 'tis probable an inflammation of the retina had taken place, & if evacuants & antiphlogistick remedies do no good the affection may be supposed to depend on a laxity of the Vessels. –

Dr Cullen mentions a very remarkable fact with regard to Angina maligna.

19 A young Boy about 14 had it in a very
severe degree. The fator of the matter
that flowd from his nose & throat was
insufferable & felt at a very great distance
A Nurse attended him constantly, performing
every part of her duty without fear & af-
ter he died went home in appearance
well. Ere long however her children
were seizd with the same kind of angi-
na from contagion conveyd as would seem
in her claaths. Hence it seems certain
that young people are much more ex-
posd to this discase than the old. —

Synopsis Medicinæ
paucula de anatomia, de
physiologia, de morbisque
partium corporis præcipuarum,
a capite ordiens, amplectens.
Die 9°. ante Kal Junii
1782 –

De capite et cerebro quædam.

Quænam est magnitudo capitis?

In alius est alia, nec ulla regula adhuc innotescit per quam, magnitudinem statuere possumus.

Quænam est ejus forma?

Oblonga aliquatenus; frons rotundior, occiput in puncto desinit; utrumque latus planius, et ad oculorum spatium augendum, et ad aures melius defendendas.

3. Ex quibus ossibus constat cranium?

Ex ~~tex~~ octo, nempe osse frontis, ossibus partetalibus ossibus temporum osse occipitis, nec non ethmoide et sphenoide.

Quomodo inter sese dividuntur.?

In propria et communia. Sex priora propria cranio, duo altera, ei cum maxilla communia vulgo dicta. Hoc autem falsum. Ut enim observavit Winslow, nulla praeter ossa parietalia, osque occipitis, propria sunt.

An ossa capitis cava vel solida sunt? E duabus tabulis constant, inter quas, quod diploe nominatur, invenies. Ha tamen tabulae, etsi aetate incunte abunde manifestae, progrediente tempore in unum coeunt. Sed sinus frontales hunc excipiendi, quia annis labentibus crescunt, inque senibus amplissimi inveniuntur.

Quomodo inter sese junguntur ossa cranii?

Suturis, quarum quatuor praecipua vulgo memorantur, nempe, coronalis quae ab altero ad alterum tempus pertinens, os frontis ossibus parietalibus adjungit; lambdoidalis, quae os occipitis, ossibus parietalibus et petroso, λαμβδα graecorum referens, adnectit; sagittalis, quae inter priores uti sagitta nervum inter ac arcum extenditur, quaque ossa parietalia connectuntur; denique squamosa a speciem squamarum exhibendo nominata, quae ossa temporum sphenoidi et parietalibus adnectit. Hanc, quasi ab aliis diversam, antiqui, falsam suturam, nomina-runt.

Praeter integumenta communia quomodo cranium tegitur?

Periosteo uti cetera ossa. Pericranium auctorum nil aliud est ac una periostei lamella, nam e duabus lamellis constat.

Cuibusnam insibus inservit periosteum?

Ossa cranii nutrit nam plurima vasa eium asportat; nervum quoque iis impertit, quippe quod nervos e vertebris colli, parique cerebri septimo recipiat, unde sensus acutus ipsi inest.

Nonne melius foret cranium unum os solummodo factum iri?

Minime quidem. In praesentia enim pars aque est valida et multum est commodior. 1m. Ossa falsus cedunt, ideoque partus fit facilior; 2do ossa citius

aquinsque crescunt; nulla enim puncta extant unde incrementum ortus simul incipiat; 3tia ictibus, casibusque variis quibus vita mortalium sit obnoxia, parcius frangitur, suturae enim, uti omni Chirurgo notissimum, cursum fracturae saepissime prohibet, denique si dura mater firmius cranio adhaereret, suturas nempe penetrando.

An perspiratio vel absorptio per suturas efficitur?

Auctores utroque trahunt, res ideo in medio est adhuc relinquenda.

An mauri ulline suturis destituuntur?

minime vero, Roland enim in negro dipecto eas invenit. Si autem arcta vel osea evadunt, mortalis doloribus capitis, epilepsia, aliisque morbis ejusmodi, fit obnoxius. Sapi-

us tamen post dolores diuturnos, ossa magis magisque separantur, uti in celberrimo Peschal observatum, et uti in infantibus hydrocephalo vel Rachitide affectis quoque notare licet. –

× Cranio remoto quaenam in conspectum veniunt?

Membrana cerebri, ab antiquis, quibus omnium ergo videbantur, matres nominata, Dura mater nempe, ac pia, inter quas tunica arachnoides, cui, ob tenuitatem, hoc nomen inditum, est sita.

× Qualis est Dura mater?

E fibris tendineis constat; duplex est ac dividua; est crassa, admo-
=dum

=dum tenax, vasisque sanguiferis abundans.

×Quænam forma?

Cerebri, quod totum involvit, convenit.

×Quomodo, quibusque partibus adjungitur?

Cranio undique ope vasculorum quorum ruptura, cum cerebrum violentius revellas, punctorum rubrorum speciem, per totam cranii superficiem exhibet. Superiori tamen quam inferiori parti laxius adhæret.

×Unde vasa ei suppeditantur?

Arteriæ a carotidibus externis et vertebralibus ortæ, uti rami arboris, undique sese pandunt. —

Quales sunt venæ?

Earum duo sunt genera. alterum, arterias, ut alibi corporis, comitatur; alterum, partis est proprium.

Quomodo distinguuntur propriæ venæ?

Sinus nominantur. Triangulares non rotundæ sunt, et bene validæ.

Quot sunt?

Quatuor tantum antiquis notæ, recentiores autem istum numerum quadruplicarunt.

Quis est primus præcipuusque sinus?

Sagittalis vel longitudinalis qui a crista galli et fronte incipiens, per suturam ejusdem nominis ad occipitem usque pertinet.

*Unde formatur hæc sinus?

Pars superior ab externa dura matris lamina, duo autem latera (nam triangularis est) ab internis laminis duobus, quæ postea conjuncta falcem formant, oriuntur. Præterea interna lamina est sibi propria. Sunt præterea quædam fraenula, id est, membranæ tendinosæ, ab altera ad alteram partem pertinentia quæ eam dilatari nimis, non sinunt.

*Quomodo in eam inseruntur venæ?

Venæ in eum apertentes duplices sunt. Minores ad duram matrem, majores ad cerebrum pertinent. Majores a tergo sinum intrantes, intra

duplicaturam durae matris, latum digitum currunt, suumque sanguinem postea antrorsum effundunt.

Ubi desinit sinus longitudinalis? In duos laterales, secundum ac terlium antiquorum. Hi, eodem modo ac prior formati, venis similiter semet inserentibus, uti rami a longitudinali, circumflexi graecorum more deflectunt, et per extremitatem septi transversi, ad basin apophyseos petrosae ossium temporum usque, decurrunt. Inde post circulos magnum et minorem factos, decurrunt; et, fossulis lateralibus basis cranii firmiter adhaerentes.

x vel inter os petrosum et occipi-
tale

ad foramina ~~[illegible]~~ inter ossa temporis et occipitis descendentes, ibique in fossulas venarum jugularium, sanguinem suum infundunt.

Dudum est sinus quartus?

Parvus et angustus pro cæteris. Et glandula pituitaria provenit, et per juncturam falcis et transversi septi decurrens, in locum ubi hos sinus priores conjungunt, plerumque, etsi non semper desinit. Hunc concursum antiqui torcular Herophili nominarunt, quia ibi, ut eis placuit, sanguis quodammodo torquebatur.

Nonne alii quoque sinus?

Immo vero sed non memoratu digni. Omnes vel in venas vertebrales, vel occipitales, vel, quod sæpius, jugulares transeunt.

*Qualis est pia Mater?

Membrana e duabus laminis tenuissimis composita. Dura matri, venis in sinus apertentibus tantum, adjungitur; cerebro autem undique adhaeret. Lamina exterior cerebrum undique circumtegit, interior autem, singulas divisiones, ad fundum usque, duplex penetrat.

*Quomodo Lamina inter sese junguntur?

Substantia cellulosa arcte desuper, laxius autem deorsum, vel vix omnino. Basi enim cranii dum lamina interior fossulas cerebri intrat, exterior sola extenditur, et ubi visa disjuncta, tunica arachnoidea, ob maximam tenuita-

-tem a pluribus fuit nominata.

×Quousque extenditur pia mater?

Non solum in omnes sulcos et anfractus cerebri, sed per medullam spinalem, singulosque nervos; unde superficies ejus est mirandæ.

×An vasis gaudet?

Immo pluribus, uti injectiones Ruyschii docent. Arteriæ ejus ab arteriis caroticis internis provenient, venæque in sinus duræ matris, obliquo cursu, transeunt.

×Cur duplex in sulcos cerebri intrat?

Ut vasa secum tutius asportet, quæ minima quidem, ibi quoque inveniuntur.

×Tunicis remotis quid apparet?

Encephalon in tres partes divisum scil. cerebrum, cerebellum, et medullam

spinalem.

Quid est cerebrum, cujusque formæ?
Id est quod plurimum capitis implet. In duo hæmispheria, falce nempe dividitur, et hæc in lobos tres utrinque, anteriores, medios, posteriores divisa. Superficies, sulcorum plena, intestinorum speciem exhibet. Substantia resecata duplex videtur; exterior quarum, colore cinereo, cortex nominatur, interior autem, multo albior, medullaris nuncupatur.

Hæmisphæriis diductis quid apparet? Corpus callosum, quod album, durisculum hæmispheria cerebri fibris transversis conjungit, quodque Lancisius aliique sedem animi constituere

×Quales sunt ventriculi?

Quatuor cava. Duo, lateralia ac majora nominata, in conspectum veniunt postquam cerebrum, usque ad corpus callosum, resecatur.

×Quomodo inter sese separantur?

Septo lucido quod videre est, corpore calloso ablato, e cujus raphe continuata et duplicata efformare videtur, sed non ex toto claudetur.

×Quenam est fornix?

E substantia medullari constat subque septo lucido ponitur. Pars anterior in duas partes dividitur quæ postea in unum coeunt. Posterior rursus bifida, quæ crura fornicis, vel pedes hippocampi, dicuntur. Secundum Winslow

~~corpus callosum~~ fornix auctorum nil aliud est ac corpus callosum, cujus pars inferior fornicem, aliqua ex parte, refert.

× Fornice remoto vel averso quid apparet? Plexus choroides, membrana tenuissima vasorum plena, et arteriarum et venarum, per ventriculos laterales aliasque vicinas partes extensa. Vena inde rediens in torcular Herophili effunditur.

× Nonne aliquot eminentia hic quoque apparent. Immo quatuor paria, duo magna, tot parva, viz. corpora striata; thalami nervorum opticorum; nates; testes. melius forsan foret nates ac testes anteriora et posteriora tubercula nominare. – Ante omnes hasce eminentias unicum est tuberculum, glandula pinealis dicta, a Des Cartes et

alias sedes animi habitat.

Ubi est tertius ventriculus?

Inter thalamos nervorum opticorum ac cerebellum iti canalis naturalis. Parte ex anteriore in Infundibulum aperit, quo, cum ventriculis lateralibus, communicat.

Quid est Infundibulum?

Cavum inter basin anterioris columnæ fornicis thalamosque opticos conjunctos positum. Gradatim contractum versus cerebri basin descendit, finemque, canali membranaceo, in glandula pituitaria, quæ in sella sphenoidali ponitur, habet.

Qualis est glandula pituitaria?

Nec glandularis nec medullaris videtur. Extus cinerea, intus partim al

x duobusque lobis cerebri post
-rioribus,

-ba, partim rubra. Oblonga est et haud raro fabum renalem refert.
×Ubi est ventriculus quartus?
Sinus est inter cerebellum et medul-
-lam oblongatam, cerebello exempto et per medium dispecto tum demum conspicimus. Pars posterior ex specie, calamus scriptorius nominatur.
×Quid est cerebellum?
Quasi parvum cerebrum et inde nomen. E duabus substantiis constat, sed superficies non circumvol-
-vitur. Sub processu durae matris, qui in multis feris osseus invenitur,
×, ponitur. A parte posteriore in duos lobos dividitur septo occipitali durae matris. Sub septo transverso

+ olfaciens, cernens, oculosque movens patens
Gustans, abducens, audiensq; vagansq; loquens

textura est vasculosa cum plexu choroide conjuncta. In medio quoque eminentia aliquot, quatuor ni fallor, appendices vermiformes nominatæ.

Qualis est substantia?

Duplex ut in cerebro; sed corticalis longe maxima. Per eam medullaris semet expandit, speciemque arboris exhibet, unde arbor vitæ nominatur.

Quid est medulla oblongata?

Pars inferior cerebro ac cerebello communis, ad foramen magnum extensa plurimusque nervorum originem præbens.

Quot nervi hinc oriuntur?

Decem paria vulgo numerantur, melius autem novem his versiculis

concepta. - Par decimum ab initio medullæ spinalis ortum inter os occipitis et primam vertebram colli ad musculos obliquos transit. Medulla oblongata inversa quid apparet?

Præter nervorum exitum arteriarumque anastomoses quædam eminentia apparent, ut rami anteriores medullæ oblongatæ crura cerebri vel femora vel pedunculi dicti; prolubeantia transversa, processus annularis vel pons Varolii nominata; rami posteriores crura medullæ oblongatæ vocati; duo paria tuberculorum ad finem medullæ quibus corpora olivaria et pyramidalia nominantur;

insuperque infundibulum productum
duaeque papillae medullares. —
Quomodo circulus fit per partes jam
descriptas?
Sanguis invehitur arteriis carotidi-
bus ac vertebralibus. (Carotides (a
καρα caput nomen ducitur) ab ar-
cu aortae oriundae per canales osseos in
apophysi petrosa utrinque caput
intrant cursu obliquo. E canali e-
grepsa, sursum versus crenam ossis
sphenoidis, per eam cranium in-
greditur. Deinde penetrat sinum
cavernosum sellae sphenoidalis, ubi
lateram in vicem curvata sursum ex-
it a parte inferiore, et quartum
curvatur circa anteriorem apophysin

cinoiden. Lacuna sic curvata, in sum-
dibulum prope sacro adjungitur.
Hic utraque in duos ramos prin-
cipes dividitur, anteriorem nempe
et posteriorem, et interdum in tres.
Hi per totum cerebrum frequenti cum
anastomosi dispersi.
Quis sit cursus vertebralium? —
a subclaviis oriuntur; per foramina
in transversis processibus vertebra
rum cervicalium ad foramen mag-
num ascendunt, ibique, ubi par de
cimum nervorum exit duram ma-
tem intrant. Procurrentes, in u-
num, plerumque sub annulari
protuberantia medullæ oblongatæ
coeunt. Sub media protuberantia pro-

recta rursus dividitur, et cum internis carotidibus anastomoses cito faciunt.
Quomodo redit sanguis e capite? —
Venae quae hic ubique ut alibi inveniuntur, cum non in venas jugulares recta sed retro in sinus jam descriptos deferunt. Hi sinus in venas jugulares internas eum effundunt, quae ramos plurimis partibus in descensu distribuentes in vena subclavia desinunt.
Sed ne hoc iter impeditum molestiam vel exitum afferret, rami sinuum cum venis jugularibus externis conjunguntur, etiamque cum venis vertebralibus.
Quid est medulla spinalis?
Medulla oblongata producta, quae e cranio, foramine magno exiens

er totam dorsi longitudinem decurrit.
uomodo formatur canalis ejus?
ertebris inter sese apte conjunctis ad
umerum viginti quatuor usque, qua
um septem ad cervicem, prima attam
nominato, pertinent, ~~septem~~ duodecim ad dorsum,
et quinque
~~hae quinque nung tex ad sacrum,~~
~~quatuorque~~ ad Lumbos. —
~~quatuorque ad os sacrum~~. Ha omnes,
alia alius alligata ita junguntur
ut dum motus liberos admittunt
canalem continuum efformant in
quo medulla spinalis absque peri-
-culo currit. Canalis interna superficies
quodam ligamento obtegitur. —
Qualis est substantia medullæ spinalis
Corticalis et medullaris ut in cerebro,
corticalis autem his interior est, quæ
in cerebro ~~ex~~ exterior.

Quænam sunt tunicæ?

Eadem ac in cerebro. Dura mater multo vertebrarum ligamento internam spinam tegenti adhæret, postea autem laxius. Pars peritonæi hic quoque adhæret.

Quomodo circulus fit hic?

Arteriæ duæ sunt a vertebralibus paulo supra foramen magnum oriundæ. Anterior et posterior nominantur in obrias quæ aliqua ex parte medullam dividunt positæ. Venæ spinales sunt rami et vertebralium et sinuum.

Quænam est usus cerebri partium eius?

Post quædam experimenta, innumerasque opiniones res tota tenebris densissimis adhuc obtegitur. Hoc constat, nempe cerebro laso, compresso vel deleto et sensus

Ad singulas orbitas formandas septem ossa conferunt, nempe os frontis, sphenoidale, ethmoides, maxillare, os mala, os unguis, os palati.

et vita cito pereunt. Hoc itaque pro fonte motus et sensus habere ratio monet. Quomodo autem animalia vel sentiant vel moveant, sapientes æque ac stolidi, ignorant.

Quot organa sensus sunt?

Qualuor scilicet oculi, lingua, aures nasus; tactus enim utpote toti corpori communis, nulli parti proprius vocari potest.

Quales sunt oculi?

Duo in ~~fronte~~ fronte positi ita ut quam latissime conspici possit. A sudore aliisque immunditiis pilis superciliorum defenduntur, et cum animalia volunt, palpebris omnino obleguntur.

Quales sunt palpebræ?

Duæ sunt e cute ac cartilagine com

posita, quarum ad concursum duo canthi sive anguli, major nempe atque minor, formantur, quarumque pars interior, membrana lubrica, sensili, tunica scilicet conjunctiva investitur. Cilia eis adsunt; musculi moventes praecipue superiori, nam inferior vix omnino movetur; et glandula sebacea Meibomii.

Unde componitur oculus?

Ex tunicis ac humoribus.

Quot sunt tunicae?

E quatuor, vel ut alii numerant, quinque.

1mo Conjunctiva vel adnata, quae a palpebris utrisque reflexa partem oculi anteriorem solam tegit

2do Cornea quae pellucida, convexa, ut sectio minoris sphaerae paulo prominet, quam tamen Winslow habet pro

continuatione solummodo sclerotica, qua 3tio totum globum cingit. Dura est, et a posteriori opaca, e varusque laminis constat. Mox sub ea ponitur 4to Choroides, cujus lamina interior in homine nigra invenitur, et in diversis animalibus diversi coloris. Uvea est pars anterior choroidea, colorata, perforata, perque corneam conspicienda, et facies anterior colorata, Iris nominatur tota vasculosa, varuque coloris. 5to. Denique retina, qua tunica tenerima, albicans quasi mucosa habet nervum opticum per totum oculi fundum expansum et est pars visus primaria.

Quot sunt humores?

Tres vulgo numerantur, scilicet aqueus sive albugineus partem oculi

interiorem replens, quique amissus cito reparatur. 2do Vitreus, a similitudine vitro fuso ita nominatus, sed albumen ovi melius refert, partem oculi posteriorem implet et retinam ubique tangit. Et 3tio Crystallinus, reliquis solidior, hinc rite lens nominatus, mox post pupillam aqueum inter ac vitreum humores ligamento ciliari quasi libere suspensus, et mobilis. Pars posterior magis quam anterior convexa est; e multis lamellis pellucidis et vasculosis constat, et in capsula continetur.

Quomodo movetur oculus?

Musculis sex, quorum quatuor recti, duo sunt obliqui. Recti sunt, Levator, Depressor, Adductor, Abductor; obliqui sunt superior seu trochlearis ac inferior.

Quædam animalia septimo gaudere dicuntur, qui oculo protrudendo inservit.

Quomodo fit circulus in oculo?

Arteriæ ubique, a carotidibus externis ac internis ortæ, panduntur, quæ demum minutissimæ, et venæ sanguinem revehunt partim in sinus duræ matris, partim in venas jugulares.

An vasa lymphatica adsunt?

In oculo bubulo Valsalva ea observavit.

Quot sunt nervi?

Plurimi; opticus ipse, retinam efformans, visus organum primarium; deinde par 3m. ac 4m. ramus quinti ac 6ti per musculos, membranas, palpebras, glandulam et sacum lachrymalem distribuuntur.

^ quæ conglomerata e

^ vel potius puncho la

: malibus

Quomodo secernuntur lachrymæ?
Glandula lachrymalis, cas secernens
in orbita superiori ponitur, supra an-
gulum minorem, unde ductibus emer-
gentes, oculum humectant, et cavun-
cula lachrymali absorbentur, ac
in ductus lachrymales immittuntur.
Quinam est usus oculi ejusque partium?
Pinguedine cinctus facile motum ad-
mittit, ex variis musculis; pupilla
angustior vel latior evadit pro ratio-
ne lucis, rerumque distantiæ; figu-
ræ rerum, radius lucis antehac atte
refractis in transitu per humores,
in retina depictæ, mente, quomodo
ignoramus accurate percipiuntur.
Hinc oculus fit origo scientiæ, va-
rietatis ac voluptatis infinitæ.-

x Quot musculi naso adsunt?

Vulgo sex numerantur, viz 2 recti.
2 obliqui, 2 transversi.

Qualis est nasus?

Organum odoratus cujus situs abunde notus cujusque figura maxime variat. Nares septo dividuntur, et tota fabrica vel ossibus vel cartilagine sustinetur.

Quot sunt ossa?

Multa quidem; ossa nasi, maxillaria, cribriforme, spongiosa, frontale, lachrymalia, palati, vomer, sphenoides.

Quot sunt cartilagines?

Quinque, quarum una media princeps, ossibus adjungitur, quatuor reliquæ laterales inter se, et media ligamentis conjunguntur.

Quorsum ducunt nares?

ad fauces, pro aeris et mucci transitu

Quomodo tegitur interior pars nasi?
membrana molli, rubra, vasculosa,
mucosa sive pituitaria Schneiderii no-
minata
Unde arteriae proveniunt?
a carotidibus, et per totam membra-
nam sunt dispersae.
Quo redeunt venae?
ad jugulares.
Qui sunt nervi?
olfactorii qui in bestiis magis quam
in homine eminent; nec non rami
paris quinti in villos desinentes.
Quot foramina sunt in naso?
Praecipua sunt 1mo ad sinus, scilicet
frontales, maxillares, sphenoideos et
cellulas ethmoidis; 2do oscula duc-
tuum lachrymalium; 3tio ductus ex
nare utraque ad os, post dentes incisoq

qui tamen membrana palati ita te
guntur ut ante carnem omnino re
notam vix in conspectum veniant.
Quis nam est usus nasi?
Is percipiendos effuit varios corporum
odores, et ita situs ut quodcunque
os intrat ei subjiciatur; una cum
sonibus voci formandæ inservit; respi
rationem quoque effuit vel adjuvat;
mucum secernit; et humoris oculo
rum diverticulum fit. In variis ani
malibus varia extat potestas, mul
tum enim interest inter canem quod
ad hanc rem leonemque præcipitem.
Quomod dividitur auris?
In externam ac internam. Prior com
prehendit omnes partes extra meatum
auditorium quæ varia sunt, ut punna

lobulus, helix, antihelix, tragus et an-
titragus, et varia cava inde formata.
Quot musculi adsunt?
In homine nunc tres nunc plures
qui superior, posterior ac anterior no-
minati aurem potius tendere quam
movere valent.
Quæ sunt arteriæ auris externæ?
Arteriæ anteriores a temporali, posterio-
res ab occipitali quæ externæ carotidis
ramus cum interna per vertebralem
communicat.
Quæ nunc venæ?
Venæ sunt rami jugularis externæ
et occipitalis.
Quinam nervi?
Ramus portionis duræ nec non
paris vertebralis secundi.

De physiologia Cerebri, ejusque pathologia.

Cuinam est cerebri usus?

Sententiae hac de re diu fuere et adhuc sunt admodum variae ac in universum incertae. Plurimi glandulam vocant, cuidam fluido secernendo aptam.

Quale est istud fluidum?

Spiritus, liquor nerveus, succus nervorum dicit nomenclatum, sed natura ejus incognita etiam manet.

Cuibusnam usibus hoc fluidum inservire creditur?

Sunt qui corpus, per id, nutritum, credunt, alii tamen, sensum et motum solummodo inde oriri, autumant. Argumenta multa, et nomina insignia, stant utrinque. —

An usus partium variarum cerebri noti?

Plures hac de re quoque inveniuntur opiniones, at ex gr. animam in glandula hippocampi sedem habere &c. sed hoc totum imaginationi debetur. —

Quid igitur de usu Cerebri statuendum?
Hoc quidem, omnes partes ei energiam
debere, quam, communicatione eas ac
cerebrum inter, dirempta, cito deperdunt,
structura ejus deleta, functiones partium
parearum et totius corporis abolentur.
Praeter structuram integram quid opus
est, ut cerebrum rite exerceatur?
Quaedam tensio vasorum est necessa-
ria, cui mire providit sagax natura;
iis enim nimis depletis, in syncopen
inciditur, et nunca plenitudo, vel
radio eorundem, phrenitidem, varia-
que apoplexia genera, infert. —
Quaenam sunt syncopes signa?
Oculi clausi, musculi laxi, corpus pro-
num decidens, superficies pallida, frigida,
corpus motus omnino cessans. —

Quænam sunt causæ remotæ?
Omnia quæ cerebri energiam minuunt.
Quænam causa proxima?
Minuta cerebri energia.
Quænam medendi consilia?
Restituere vim cerebri, quod fit stimulantibus, ut acre frigido immerso, aqua frigida inspersa, aromaticis vel acribus odoribus nari adhibitis &c.
2d. Positu, caput enim humile sanguinem illuc allicit quo nil aliud vasa æque stimulat.
Num venæ sectio prodest?
Non modo nil prodest sed multum equidem nocet. Sanguinem enim in cerebro jamjam nimis parcum diminuit.
Num phrenitis sæpe idiopathica inventa?

Minime; fere semper sympathica seu symptomatica est.

Quænam sunt ejus signa?

Pyrexia vehemens v. c. Cull. Syn. p. 90. —

Quænam sunt causæ remotæ?

Quicquid stimulat membranas vel substantiam cerebri, et quicquid impetum sanguinis in vasis ibi positis adauget. Hujusmodi sunt pathemata stimulantia, quædam venena et alia plura, quorum modus operandi prorsus ignotus. —

Quænam est causa proxima?

Inflammatio membranarum vel substantiæ cerebri.

Num inflammatio membranarum ab cerebri ipsius dignosci potest?

Plurimi Nosologi rem tentarunt, sed omnes secundum Cullenium accuratissimum operam perdiderunt. —

Quænam sunt consilia medendi?

Impetui sanguinis in cerebri vasis moderari.

Quanam remedia conveniunt?
Regimine antiphlogistico adhibito, largæ san-
guinis missiones a capite, seu arteria
temporali, sive vena jugulari; cathartica
quæ et evacuatione et revulsione
prosunt; epispastica capiti ipsi adhibita;
pediluvium, modo aqua non sit
nimis calida; et denique res frigidæ
immo frigidissimæ capiti adhibitæ,
conveniunt. –
Num opiata prosunt?
Minime, hæc enim signa semper gravi-
ora reddunt.
Quanam sunt signa apoplexiæ?
Motus voluntarii fere omnes imminuti,
cum sopore, plus minus profundo, superstite
motu cordis et arteriarum. –
In quot species dividitur?
In plurimas, sed sanguinea, et serosa, hæc
duæ sunt: utrum hydrocephalica sit dua-
sa nemo vix constat. –

Quænam est causa proxima?
Sanguis vel serum effusum in cranium et cerebrum premens.
Quænam sunt causæ remotæ?
Præter externam violentiam et pravam conformationem, hæ quidem plurimæ.
1. Omnia quæ impetum sanguinis versus caput augent; hinc ebriosi sæpe fiunt apoplectici; 2do. Plethora, quæ quidem facile locum habet in venis capitis, nam ita formantur ut sanguis in iis lente moveatur. Venæ autem distentæ et cerebrum premunt, et sanguinem in arteriis obstruunt. Hinc rupturæ; hinc serum vel sanguis effusus.
Quænam est prognosis?
Semper infausta, nullus enim morbus sæpius vel citius laborantes ægros, admittit. –
Quænam sunt remedia?
Ita, hoc in morbo, minus quam prophylaxi=

et fidendum. Caput erectum convenit,
nam ita sanguis facilius e capite fluit,
odicum frigus, et sanguinis detractio. —
Num Hydrocephalus internus idem ac apo-
plexia?
a plerisque nunc placet. —
uanam sunt ejus signa?
ulatim adoritur; infantes et impuberes
rimum lassitudine, febricula et dolore
apitis, dein pulsu tardiore, pupilla di-
atatione et somnolentia afficit.
uanam optima prophylaxis?
hispastica capiti applicata, et ope un-
uenti epispastici pars vesicata aperta
rvata.
uanam remedia?
anguinis e capite missio; Cathartica;
pispastica, sed praecipue, ptyalismus
quam citissime excitatus. —

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ms live in Earth. Is this in conse-
nce of the animal & vegetable matter it
tains? To ascertain the question mix alka-
e salt with the earth, then wash it & try
a worm can still live. The alkali will
solve & the water will wash out the ani-
eg.le matter. –
at is life? Is it a particular organization?
Hunter says no – because the same orga-
zation exists after death. But this is
a assertion without proof. Shall we de-
ne it by its most simple property viz ac-
on? This is its general effect & conse-
uence but this is not sufficiently gene-
l. For the most part, when action has
ce begun it must continue as long as
e, but paralytic limbs & syncope show
t a part or the whole of an animal
ay be deprived of action without los-
g life. – Every particle of a fresh egg is
ve tho' not in action. – 1st A fresh Egg
ered during incubation, will show that

part of the albumen which is not co-
sumed, fresh & free from putrefaction, bu
an egg, which will not hatch, has di
albumen putrefied in the same time w
other animal matter.

2dly a new laid egg will not freeze
soon by 7 minutes as an old one or on
that has been frozen & thawd - Mr Hr. tri
this in a mixture 0 below Frost of Fa

Thus it seems that an Egg, tho' inor
ganic & inactive has the power of resi
ing heat, cold, & putrefaction. Imperfect a
-mals give similar results. -

Shall we call life a principle a
-ded to organization, or shall we call
a particular modification of organizat
The great end of conferring life at least
to produce action - Without it the specie
never could be continued - The silk-w
as soon as it becomes a fly - copulates
dies - & What does man? life can litt
more supply to
than just look about us & to die. - This

improved. –
ctrefaction follows the extinction of life.
ore or less rapidly however – A man af-
an operation for fistula died in 3 hour
putrefied immediately – The same thing
as observed in a young Lady who died
ddenly – & in persons thunderstruck – To-
ards the close of putrid fevers again
ere are many symptoms of putrefaction,
ut it seems to be only in the secreti
ns as in Hs opinion it stops for some
ours after death. –

J. Hunter divides the actions into such
have an internal operation – ex. by affec
g the growth & alterations of the human
dy – & 2dly into those which are performd
single members as the arm &c. There are
e voluntary, & those the animal accord-
ng to other Authors – The first must be re-
ular & constant, but there are many Ex-
mples of the contrary – Witness the follow-
g case of J. Hunter – Ds equal it who can.

 – He had the gout 3 successive springs, missed it on the 4th & on the 5th was attacked by a severe pain in the pylorus. A large spoonful of T. Thoi with XXX Drops of Laud. gave no relief – A mirror discovered extreme pralency in his Countenance; there was no pulse at the wrist, nor could any motion be perceived in the heart. – Involuntary respiration was suspended, but he worked his Lungs with great violence by voluntary exertion – Thus he continued an hour, pushing to no purpose swallowed Madeira & dy H.C. – In a few hours he ceased his sufferings. Here the involuntary actions were suspended, the voluntary continued!!!

Animals are found without hearts & fœtuses without brain, but no animal has been found without stomachs or the parts of generation. – These therefore seem essential & best discriminate animals from vegetables. – The stomach is an organ

universal sympathy & a seat of irri-
bility as the Brain is of sensibility. It
sympathizes however with different parts
cording to a Law which we have
t yet detected. We do not wonder that
nching should be produced by concussi-
s of the head, because the Brain is com-
ohly reckoned the source of sensibility; but
tho' a muscle be much more irritable
an a Tendon, an injury of the latter
fects the stomach more than one of the
mer. - A strained tendon produces sick-
ess & fainting, a strained muscle, pain
ly. - Disagreeable smells too affect the sto-
ach powerfully. -

Veins never absorb not even in a
dumescence of the Penis - The Corpora ca-
rnosa are to be considered as veins con-
tantly receiving blood from the arteries -
ey open into other Veins which in ge-
ral carry off the blood, but during

50 an erection, the last are seized with a spasm which prevents the blood from issuing out of the corpora cavernosa like all the rest. but whence the spasm? - J. Hunter tied up the veins of a dogs penis & produced an erection. -

The fat in fevers is absorbed from the cells in which it had been deposited. this for the purpose of nourishment or more to remove what was useless? If the former, why does nature absorb this kind of nourishment, while she teaches the stomach to reject food? if the latter, how is the fat more detrimental during a fever than at any other time?

The nature & effect of the absorbents now pretty well known, but much obscurity still rests on the subject. Are the fluids changed by being absorbed? Mr Hunter thinks they are, & he says that the venereal matter ~~taken~~ is not a poison before it

taken into the system. What is it 51
.? – It is uncertain whether clysters
nesh people or not. –
. Hunter has lately revived the lan-
age of Moses & talked of the blood's life.
s he attributes to it for many reasons;
. Any part deprived of blood dies – The nerves
e sensibility & the power of action, but
d is necessary to life. –
ly Every part is formed by it. –
ly altho' at rest for some time as in a
t of fainting, yet the heat of the body
not coagulate it.
ly It sympathizes with the vessels thro' wh.
passes – & receives from them an inflam-
atory tendency. In inflammation it sepa-
ates sooner & coagulates more slowly than
other times – It seems mottled or spotted as
flows from the arm – The Lymph becomes
ner than in health, but requires some
es ½ an hour to coagulate. – The ur.

face is so transparent, that if before c-
-culation you dip your finger, it is fil
with Lymph only, not with red blood.
Inflammation increases the tendency to
union, by which adhesions are formd & he
morhages stopd. By passing thro' healthy
vessels this tendency is diminishd or destr
A man was punctured for hydrocele - th
bye the tumour began again, when o
laying open the tunica vaginalis, the tes
appeard enlarged & had adhering to it a
large vascular coagulum - This had be
formd from some blood effusd by puncture
the former operation.

A Gentleman died suddenly from ve
-lent passion & his blood did not coagula
Two Deer were hunted to death & their bl
did not coagulate - Here the cause of de
or something in the habit suddenly pro
duced a total extinction of life in the blo

vor being without organization is also
thout sensation. —

Neither animals nor vegetables can live
titute of heat — The fact is certain, but the
inner in wh. heat arises has produced
thousand disputes — Some say it arises
on an excandescent principle, but this
unintelligible & unanswerable —
ly does it arise from friction? — Some say
t the figure of the arteries is that of a
verging cone, so that the friction in the near-
w extremities is much greater than that
ater the base, but this is a perfect mis-
presentation — 'Tis true, any one branch
any artery considerd singly, resembles a
verging cone, but so many branches di-
rge from every part of it, that the quan-
y of fluid in the extremities is much in-
rior to that near the base, & its motion
ing slower, the friction is smaller — Besides

The friction of a fluid on a solid never produces heat excepting when there is a chemical change - Even the friction of fluids does not produce heat, if they be dry, or if their surfaces be separated by a fluid - Hence Cart-wheels are greased.

2dly - Is heat derived from changes in the fluids, by fermentation or otherways? Dr Stevenson said yes - others say no. J. Hunter says that animal fermentation does not evolve heat like Vegetable, besides, bluing & many other phenomena all agree against the hypothesis.

3dly Does it arise from the Lungs? Many Philosophical Chemists have thought so - Lavoisier & Crawford's theory - J. Hunter tells a case where a man, in consequence of a concussion drew in breath $2\frac{1}{2}$ times & inspired by jerks too, by in a minute, yet altho it was

ch of Feby the man was but
ly covered, he continued tolerably warm.
Is heat owing to any decomposition
stantly going on? J. Hunter once thought
but found it contradicted by Exp^t.—
laps were put into a freezing mixture
ce of the nitrous acid - The cold gave
m pain, but the water near the sun
ce of the fishes did not freeze for some
ne. This only proves that they retained the
wer of generating heat, but does not in
cate the nature of this power.

Dif^t animals require different degrees
heat in the Atmosphere - The Bee requires
heat to be at 90 or 91 - the wasp or fly
n allow it to descend much lower. —
e white Bear, for they live in a climate w^h
be fatal not only to the Lion & Monkey
t even to the extremities of the human
dy - The best temperature for the former is
, for man 60 or 63, for the Lion 70. —
~~extreme~~ cold produces deadly sleep - Dr Solan
-der

in terra del Fuego experienced the
It did not continue 5 minutes till he
lost the power of his Limbs, & his feet
were so shriveld that his shoes fell off
The heat of torpid animals is much di-
minished - In g. 44 a puppy & hedge-hog
were examined. In the pelvis of the former
the thermometer rounded to the 108th. in the
latter to 45. - In summer the hedgehog's
is from 91 to 97.

The more perfect animals have the
greatest & most uniform heat - The im-
perfect have less, & vary it along with
the Atmosphere - A Snail whose heat was
42 being put into a freezing mixture grew
cold & seemd dead - A Thermometer thrust
into the Anus of a hen rose to 103 - & 4 of
an Eqt. - The Thermometer under Mr Hunter's
tongue stood at 97 - an inch up the Uve-
thra at 92 - a little higher - 94 - at the

b-97-- The degree of heat in the
ral parts he rates at 99.- Animals
generale heat, therefore can bear def-
ent degrees of cold- They can also en
e diff^t degrees of heat- because they
eep the power of moderating their own
t.- Evaporation by the surface or by
e member is the most obvious me
of doing it- An Eel can endure a
nutrition of heat below the freezing
nt, but whatever be the heat of the
dium, will never suffer it's standard
at to be raised.
ve Animals then a power of general-
g cold independent of evaporation?
Fordyce made the following Exp^ts to
went into a suite of rooms heated
th a flue, having no chimney & only
sky-light. In the first room the thermo
eter rose from 130 to 132- The Dr's heat
as only 100; the air around his body

was colder than in any other part of the room; & the surface of his body was cover'd with moisture. This Dr & Mr Hunter think proves a power of generating cold independent of evapo-ration, but there are many oversights the Expt. 1st Only a few particles of the superficial or pulmonary blood were exposed to the heated air – 2dly Evaporation is compatible enough with Condensation – Every day shows both – A man during hard exercise has his body at once moist & reeking – All therefore the Dr's Expt. proves is this, that a bo may be so warmed as to pour out sweat faster than the air can evapo-rate it*. – In 30 minutes a beef Steak

*Another argument alledged by S. Hff. is that in a crowd of people cold is generated – Dont the crowd sweat? Are there not

e on tin was boiled by the heat
the air - in an hour & ½ water was
ated to 140 degrees - Salt water was
ower heated because it is less vo-
atile. Even from this Atmosphere Pt.
ent out into the open air, having
ly shifted. & received no injury.

The lowest degree of heat volatilizes
ne substances & suspends them in the
r - an increased heat increases the quan
ity of those - Hence the impurity of the
r is in proportion cat. par. to its heat.
ut the heat sometimes rises so high
to decompound & destroy contagions.
Blane thought at least he observed this
the Wst Indies, & he says the plague &
l Fever are unknown between the
opics. His facts are doubtful & his rea-
nings or observations are contradicted by
others.

60 - The Harmattan is a wind that blows from the internal parts of Afr generally 3 or 4 times in the year, but no stated season. It continues to blow from 3 to 15 days - not quite so strong as the sea-breeze. It is accompanied by much gloom or fog, which some have supposed to be insects, but without proof as they cannot be seen without probability as they produce nothing. The wind is so extremely dry that the throat, lips &c. are chapped after 5 days the cuticle peels off, & if a little longer the perspiration becomes acrid - Convalescents however recover fast; Dysenteries, Intermittents & Remittents are cured. Inoculation before the Harmattan did not produce the disease, but did afterwards - Only one

el died of a Lock Jaw from a large
cer in the arm. —
The Laws of sympathy are very little
own, & even the facts are not per-
ly ascertaind. Worms produce itch
g in the root of the nose; a disease
the hip, a pain of the knee; the in
duction of a Bougie at first hardly
ceptible, pain & vomiting; and a
anche tonsillaris, a swell'd testicle.
Hunter in treating diseases mentions
t Susceptibility, 2dly Disposition, 3dly Ac-
on. A part is susceptible of impression,
impression produces disposition, & this leads
action. The Eye is susceptible of light,
much of which gives a disposition to
flammation wh actually takes place
often. — The most material remark is
at one morbid action sometimes sus-
pends the

disposition to another, without however finally preventing the action.

Three patients were inoculated for the small-pox, & on the 3d. day symptoms of it's having effect appeard, but the Measles coming on before the 7th. the small-pox did not show themselves - The measles were cured & the variolous pustules came forth. - A putrid fever produced a similar effect on a young Lady. It began on the 7th day; suspended every symptom of the small-pox; continued a fortnight & then gave way to the small pox which began with inflammation in the arm & rigors. - Nay J. Hunter says the Measles have sometimes cured venereal Eruptions. - 3dly If an Eruption give way during a mercurial Course & appear again

not venereal. –

position according to J. Hunter is sometimes
id by action – Thus in periodical diseases
suspended & in others cured entirely – The
ion cures the Disposition to Vomit. – Loss
blood has sometimes produced Jaundice, Drop
& difficult respiration, so as to irritate the
stem & remove Disease. – A fit of the Gout
an acute disease & removes the disposi
n to it – Acute diseases often cure chronic
es by exciting sufficient action. –

A Gentleman of an irritable habit had an
hing about the pubes, & applied a Solution of
rosive Sublimate. An hour after the applica
on, the scrotum was corrugated, inflamed, haun
th an effusion of Blood – Lime water was
plied to decompound the mercury; opium was
plied externally & internally to remove the irri
bility & bark was given. – An Emetic being
ven on acct of nausea, blood was voided by
ool & vomiting. Sach. Saturni was used in

rosin & turpentine (with cold pump-water) was given internally. (Inglyslers) On the 3d day he was very low & weak with cold-sweats, but by Bark & wine he recovered, but soon after became dropsical. Here the disposition had become time forming, before the effect took place & the action of restoration ceasing, he relapse. But this explanation is extremely crude. — Accidents often rouse into action, dispositions that had long been latent. Thus a sprain produces Scrophula. Sudden swellings of the Legs admit a similar explanation, & not by saying the humours are fallen down into the Legs, which is nonsense. — What are the effects of heterogeneous Exptl. fluids introduced into the Blood?

1. A weak solution of sea-salt was thrown into the Vessels of a Dog, without producing any effect

2. A strong solution of Glauber's Salt was thrown into the Vein of a Dog without producing any effect. —

A Solution of Sal. polychrest also w.d
t effect.
℥ii of Borax in ℥i of water were injected in
the Vein of a Dog without any bad effect.
One part of Vinegar with one of water
own into the Vein of a Bitch far advanced
pregnancy, produced miscarriage. —
A diluted mixture of sulphuric acid, near-
of the same strength was also injected
ithout any bad Effect. —
Hence it appears that powerful remedies
ay be present in the blood without any
d effect. — Where any bad effect is produced
merely local & not from any specific or per-
manent disease.
pts. 1.st A strong solution of Opium was thrown
to the crural Vein of a Dog. He was first con-
ulsed, & when more was thrown in he be-
ame quiet, but his breathing was la-
rious & his pulse quick.
2.d ℥ii of common Gin thrown into the

66 Vein of a Dog produced great relaxat
He remained quiet near an hour & then
-covered. –

3d ℥ii of Laurel water thrown into the
of a Dog produced convulsions – His legs
were drawn up to his body, but he rec
vered. – The action of many bodies continu
only while they are present in the blood, &
the effect of some thrown into it, is the same
if they had been taken into the Stomach

Expt. 1st 5 Grains of Ipecacuan thrown into the
Veins of a Dog produced immediate sick
-ness, before it could have time to reach
the heart.

2d ℥ii of Salab in ℥ii of water soon vom
ed, but in a short time it produced dul
-ness, weakness & several Stools, after whic
he was perfectly well.

3d An infusion of Rhubarb only tinged
Urine.

An injection of Æther produced immediate
death.
Vinegar had the same Effect. —
Diluted nitrous acid thrown into the Vein
of a Dog disturbed him much, but did
not kill.
The Air injected killd immediately. —
The Air therefore must be excluded with
the greatest care, & the want of attention
to this has rendered the Expts of Fontana
inconclusive. —
The Serum of a putrid Vesicle in a ma-
lignant fever injected into the Vein of a bitch
produced Vomiting & miscarriage, but not Death.
Conclusion. — Extraneous matter thrown
into the blood produces no specific disease,
no permanent effect, nor death, unless when
the quantity is too great.

68- Susceptibility to many diseases is stro
er in one than another- hence the slightes
cause excites the Gout or Scrophula, & the dis
ease is termd hereditary- This however is a
error & no disease can be strictly speaking
hereditary. - A Father's having had a dis
ease does not make him liable to convey
a stronger disposition to his Children, oth
wise the pox would have been ere no
uncurable. —

Madness is sometimes excited withou
any apparent cause except uneasiness of
mind. - It has never been observd among
Indians. - Is this certain? —

The mind affects the body & produces
blushing, vomiting, Discharge of urine &c.
An irritable Gentleman falls into Diar
-rhea when he falls into passion. -
The will cannot prevent the Effects of the

sions - & the involuntary actions induced by
cate are most readily affected by them. -
woman when she thought of any thing dis-
reeable was seizd with a contraction of
Sterno-mastoid muscle which however
uld be counteracted by its antagonist. Dur
g sleep or pleasant sensations she was fee
m it, but by thinking of it, it became more
e Hiccough is produced by mirth, diminish'd
fear. The touch of a dead man has dis-
p'd humours & cur'd agues. -
Voluntary parts become involuntary in
raems, the contractions encreasing in severity
every new effort to restrain them. -
The ability of any part to resist disease, de
ends on its strength - The bones & tendons
ys J.H. are the weakest therefore they have
e least power of resistance. - How prov'd. -
Hunter divides the human age into 3 stages, 1st That of
rowth, 2dly The stationary, 3dly That of Decline.

70 But 'tis difficult to say where the first ends & where the last begins. Each age is exposed to different diseases tho' those of the 1st & last are the most numerous. The young are most subject to all the diseases which arise from irritability or sympathy. Convulsions, are them most frequent - also Scrophula, complaints of the Bowels, hydrocephalus &c. - The stationary age is exposed to various nervous & hypochondriacal disorders, as ~~to~~ well as to a variety of evils which sow the seeds of ~~evils~~ disorders for old age.

Old age does not perform with sufficient energy the necessary actions - Hence irritation attempting to encrease natural action ends in Gangrene - Gout is frequent - Cancer also - Concretions in the biliary ducts - Apoplexy, hard adhesions & ossifications of the arteries. -

Diff.t parts are particularly affected in Diff.t Diseases. The skin in small-pox, that

he Lungs in Measles, the throat in Cancrum
lness, the Lymphatic Glands in the neck
elsewhere in Scrophula, the conglomerate
ands ~~of~~ the breast & Testes in Cancer &c.
Lamp-lighter received a fracture on the
Occip. extending to the Foramen magnum,
e extensor muscles were in part removed,
the skull being trepanned, he was dis-
arg'd in decent health — But he feels
nself very much affected by the full
oon & by the return of spring. —

Another person very scrophulous was
ubject to deafness, except during harvest,
hen the moon was full. —

When a tendon or the fascia of a muscle
is injured, the muscle suffers more than
if the injury had been done to itself. Hence
Sprains of the former produce a weak-
ness in the joint, a wasting of the mus-
cle & a decay of the whole Limb. —

The Joints, tendons, bones &c are parts of the machine, the muscles are moving powers only. The last if injured tho' extremely sensible soon restore themselves, but sympathize in a mortal manner with any injury done to their unfeeling Associates. This is seen in Hip-cases. - Why does this happen? J. Hunter says the joint is conscious that it ought to be weak when the Tendon is weak. the muscle enters into the idea, & grows weak apace, just as a prud. Waggoner diminishes his Load & slackens his pace when two of his best horses die! - If the Joint or Ligament recover the muscles resume their power & everything goes on as before. -

Many diseases lose the disposition to continue by being brought fairly into action

s Pustules spreading from the groin to the
ly head in one part before they creep to
ther, also The ring-worm, Erysipelas &c
Mutual Sympathy exists between the head
stomach, but such Examples are rare.
Liver for example does not sympathize
th the shoulder, nor the kidneys with the
ye nor the Bladder with the Glans Penis,
there is an inverse sympathy.
Hunter divides Sympathy into 3 Kinds, viz
1st Continuous - as when Inflammation spreads
om a central point all round.
2dly Contiguous - as when parts sympathize
merely from proximity - Thus a plaister on
he abdomen affects the Intestines, the Lungs
ympathize w. the Thorax, the Testes with the
crotum, the Brain with the Scalp &c.
3dly Remote - which is common or uncommon.
Common where the head sympathizes with
the stomach, uncommon where a stone

 in the Bladder produces pain in an arm instead of the Urethra. Lord Clarendon is an example. – The Stomach is the seat of most universal Sympathy, but it sympathizes most with particular parts as the head, the testes & the Skin – It's sympathetic power decays as life advances. – The milk of a Nurse once stimulated the stomach of a child so as to produce eruptions on the skin, which were supposed to be venereal, but on changing the Nurse they disappeared. Cyder produces a flushing of the face; spirituous Liquors, generate pimples; worms & particular kinds of food cause affections of the Skin; wet feet hurt the stomach. a little salt put on the Leech make it vomit instantly.

The part originally affected Mr Hunter call the Sympathent, the part which sympathizes with it, he terms the Sympathizer. Similar

pathy is when both are affected in a ci-
lar way, but this depends on the nature
e sympathizer - A Chancre on the Testicle
ll produce the same effect as on the groin,
t by stopping the Secretion there will be
additional effect. — A sensation in the
ain must be different from one in the sto-
ch, & this is susceptible of a great vari-
y of different Sensations, dissimilar to those
the Sympathent. — The same cause shall
metimes produce similar & dissimilar sym
thy - Thus a pain in the testicle shall
oduce a pain in the back - this is simi
ar, but it shall also produce nausea, wh
dissimilar Sympathy. — The system sympa
izes so cordially with any injured part, that
ectic is often the consequence of fracture.
Man at St George's Hospital from a wound
the Ellow became hectic, but was cured
y amputation. Cannot this be otherwise
explained? —

The constitution in general sympathizes more violently with an involuntary than a voluntary part that is injured. — Parts produce too a degree of sympathy proportioned their distance from the Source of nourishment. The Leg for example, when injured is more dangerous than the Shoulder. — There are many natural sympathies established between parts whose actions are dependent on each other. The respiratory muscles sympathize with the Lungs; those of the abdomen with the sphincter ani; the Glans penis with the neck of the Bladder. The Head, Stomach, & back are general Sympathizers next the Tongue, Kidneys. Diseased sympathies are often nothing more than the natural ones too much increased but others are irregular. The itching of an issue on the right thigh, when that was

alchd, once produce difficulty of breath
, & several affections of the breast.
Thus we Sympathy is when one feels an
pression, but either refers it to a wrong
ce or to a different person. A man in
Delirium of fever wishing to make wa-
refers the desire not to his own blad-
er, but to some of the bye standers, in sym
athy with whom he pisses - Another wish
g to cough or sneeze or cough, refers the
clination always to some other person
sympathy with whom he did the action.
Gentleman fond of his bottle, refers his
loxication always to others & actually
it all his family to bed. -
What are the uses of Sympathy?
1st It connects the most distant parts.
2dly It enables one to throw off something we
ep by the cooperation of many. Mucus is
hus thrown from the Lungs, & a fœtus
xpelled from the Uterus.

3dly A sympathizer often cures a Sympa-
-thent. A swell'd testicle is cured by nausea, yet a pain
4thly By diffusing the pain, it renders it
more tolerable & less hurtful. —

5. Applications to one part become by sy-
-pathy useful to a distant one. The warm
bath relaxes the skin only at first, but a luxated
humerus, or constricted Bladder are also
relaxed by sympathy. —

When there is a Bubo which we wish to dis-
-cuss by friction, we ought not to rub the bind-
ment too near the Gland as many of the ab-
-sorbents pass over it not thro' it. We should
therefore begin on the Leg & Thigh. —

We must always attend to the strength, when
we raise the action of a part. After much the loss of
blood strong cordials are improper, as also
when a person is almost famished to dea

must be careful to make the powers
crease in proportion to the action of the
achine & vice versa. —
The extreme parts have less vital heat
account of their distance from the heart
t they are covered with hair & their
nes are more filled with marrow in
rder to prevent the dissipation of their
eat. — The last is true, but how's the
first proved? —
Cold in order to rouse the system must
be suddenly applied - but sometimes a
onsiderable length of time is required. thus
e Gentleman whose Legs were weak on
rst going into the Bath was not relieved,
ut found relief from continuing in it some
me. — If an Animal be long exposed to
treme cold he must not be suddenly
posed to very great heat, otherwise he
will perish. —

 Those parts of the body which have the most acute sensation are most easily heal'd & vice versa. A muscle & the cellular membrane, particularly that part of it which covers muscles, or lies below their interstices, heals most readily. The Bones, Tendons, ligaments, periosteum, & the Cellular membrane which covers or joins Ligaments have little sensation & heal slowly. —

While an animal is growing injuries are easily repair'd, & even after the stationary age has arriv'd, the System is easily rous'd into action, but after nature has begun to decline, this is not the case; useful parts decay, & useless matter is often deposited. (hence calcareous concretions) irritation produces inefectual inflammation, leading not to union, but

Gangrene.

Diseases cure each other as was hinted merely. – A local complaint sometimes cures the Constitution – Gout, critical inflammation are proofs, & led to imitate them by blisters, Issues &c. but art often imitates the action without producing the effect of nature. – Universal fever sometimes cures local Disease – A noli me tangere after resisting every application of medicine, yields to a fever. The fever produced diseased action in every part except that which was already diseased, for there it produced a healthful one. – Local complaints often cure each other – as Blisters remove pains in the head or side, – burning the helix of the Ear cures the tooth-ach –

Inflammation is most probably seated in the smallest vessels, as the large ones only supply materials for it viz Blood. It is also analogous to the part in which it is seated. healthy in the healthy, morbid in the diseased. It is divided into the adhesive, the suppurative, & the Ulcerative.

We may divide the body into Substances of two Classes viz 1st The Cellular membrane & larger circumscribed Cavities, 2dly Different outlets as Ureters, Intestinal Canal &c. —

In the first adhesive inflammation (except in Erysipelas) takes place first, then suppuration; in the 2d Suppuration comes on first, & then sometimes adhesion, tho' never without Granulating.

Adhesion takes place from the plentiful exudation of Coagulable Lymph

t is thrown out by the Blood Vessels, which
only glues together the Surfaces of lami-
, but also fills the Cells of the Cellular
embrane giving the appearance of Solidity
an inflamed part. — Inflammation seems
affect the Blood so as to give it a great
tendency to Coagulation. Hence the Coats
the Veins are found smeared with Lymph
, various humours are formed from it. —
hatever changes may have been produced
the Vasa Vasorum on it, it not only re
ains Life but acquires an increased dis-
osition for solidity. It partakes of the con
tutional quality & is either venereal or
ancerous according to the part from which
t flowed. —

The use of Adhesion in Cavities is to li
mit the Inflammation to ~~the~~ one part of it, &
to prevent the diffusion of pus. 2dly to
check Suppuration. —

84 - The suppurative Inflammation takes place where an injury cannot be repair'd by the adhesive. It leads to granulation (tho' not always, as in the Intestines) & heals the part. When spontaneous 'tis more violent than when excited by a wound, & more violent also when the part is not kill'd. -

The ulcerative takes place in consequence of the former, & is that which disposes parts to absorb themselves bringing pus nearer the surface.

Any cause that prevents the free passage of the blood in the small vessels may produce inflammation & in consequence, suppuration, in order to throw off the obstructing matter. -

Poisons produce specific inflammation but 'tis the poison that ought to be reckon'd the disease & not the inflammation, unless

ere the parts are unhealthy for then the
lammation will be erysypelatous or scro-
lous.

The cause of inflammation will produce
effect different according to the constitution
of the part affected. The small-pox will pro-
e a putrid inflammation in one not in
other, & scrophula inflames certain glands
preference to the others. The specific matter
pox will produce a chancre, or pustules,
t these will sometimes excite an erysy-
latous inflammation, which must be cur
st. –

Deep-seated parts are most subject to the
hesive inflammation, which generally cures,
tho' in cases of great violence suppuration
sues (as in the Carbuncle which is not ery-
pelatous). The external parts are more
one to suppuration. A ball or bit of Glass
enetrating a deep-seated part, forms for it
=self

self a bag in consequence of the adhe
inflammation, & remains without moles
tion. Pins are often found thus shut up
the stomachs of Oxen. Any of these subs
near the surface are thrown out by supp
-ration, except Glass which is sometimes
even here encysted. –

In the cellular membrane & in
circumscribd cavities the adhesive inflam
-mation takes place readily, but the outl
are more subject to suppuration. If the Tra
chea, the ureters, the Urethra &c. were to a
here the consequence must be terrible. Sup
-puration seems only an increasd or allerd
tion of the Vessels called Mucous.

Strong hearts soon restore themselves &
recover from the effects of inflammation. If
heart be relal & at the same time wea

danger is great - Hence inflammation of
Stomach is frequently fatal. The bones &
ons tho' mechanically strong have little
ver of healing, so inflammations of these
very dangerous. - When a part is sound
either unites by the first intention, or the
puration quickly cures it, but in weak
ts as in Dropsy ex. gr. when inflammation
nes on it leads to Gangrene - Frequently
deed the parts cannot excite even this in
flammation, hence the wounds after scari-
cation continue open, while the water conti-
ually drills from them. -

The pulse is always affected by inflam
ation, but differently according to its seat.
nflammation of a muscle produces acute
rain & quick, full, hard pulse; of the Liver
r Stomach, a quick small one; of the heart
& sometimes of the Lungs, a small depressed
one. In general, those parts which are sup

-plied from the par vagum are most dangerous when inflamd. –

Rigors commonly attend the commencement of inflammation – from an affection of stomach, most probably, & the sympathy of the skin. They also are the consequence of pain & sometimes of the prick of a needle. – Rigors occur at any ~~part~~ period of a disease, but most generally at it's commencement. In a remittent fever, which had an exacerbation every other day, a rigor came on at the end of fortnight – It was succeeded by a hot fit, & stopd the fever.

Inflammation renders the blood more easily separable, & the coagulum of a harder consistence. Perhaps this change in the blood may be in consequence of a local affection & the constitutional sympathy in consequence of the altered blood.

man received a stab in the side & was
d immediately, which appeared very healthy.
about half an hour he became sick,
It seemed to denote a Constitutional dis-
e. Blood was again drawn & this was very
ey.

Is this state of the blood produced by an
ncrease of animal Life, or only from an in-
ased disposition to act? It seems to be of-
from the last, as it often takes place
ne or partial irritation where the animal
ers are weak. In pregnancy there is
n increase of animality, or rather of vitality
When a debility of the Solids produces a
minution of action, it produces also a dep-
olution of the fluids as in putrid fever.

Sometimes the Blood is sizey, tho the Pulse
be soft & slow. A Gentleman with a mov-
able pain in his side had a very soft
Pulse, but it became quicker & harder on

90 drawing blood which was sizey. —

The swelling of an inflam'd part owing to the extravasation of Coagulable Lymph & serum - the last separates & is squeezd into the Cellular membrane which conveys it to the depending parts. Hence ~~ter~~ inflammation of the Leg or arm the hand or foot is swell'd. —

The colour of healthy inflammation red, but approaches to purple in proportion to the want of health. The redness arises from 2 Causes. 1st from the dilatation of vessels, so that red blood flows where only serum flowd before. The best Example is the Tunica albuginea. — 2dly The formation of new Vessels in the extravasated Coagulable Lymph. When any thing is performd on a part, more blood is sent thither than was requird for mere nourishment.

diseased parts seem hotter than the rest of the body. Different parts have different powers of increasing heat. The stomach is in this way remarkably distinguished. In this manner probably the Cold bath produces its heat by having the increased tone communicated from the skin to the stomach. Heat has been sometimes raised 12 degrees by Fever - Local complaints raise the heat of the part & sometimes by sympathy of the whole body, but in general neither a local Complaint nor symptomatic fever can raise the heat of the blood above the standard heat. Experiments -

1 In Hydrocele the Tunica Vaginalis being opened a Thermometer was immersed & the ☿ rose to 92 - next day when inflammation had begun, it rose to 98. There was an increase of 6 Deg. but the heat did not exceed that of the healthy body.

2 The Thorax of a Dog was opened & a

92 Thermometer plaed against the Diaphragm
It pointed to 101½ did the same next day.
3d. A Thermometer in the Rectum of a Dog
pointed to 102 – By a solution of corrosive
sublimate injected, an inflammation was
excited, but without increasing the heat.
4th Corrosive Sublimate thrown into the Stomach
of an Ass, excited inflammation so violent
that ~~inflam~~ adhesion instantly took place.

From these Experiments it appears that
local Inflammation will not raise the heat
of an Animal higher than the Standard heat
which however is one degree lower in the
morning than the Evening.

The more perfect Animals possess the
power of producing cold – Many affections of
the Stomach have this power directly.
Exptt. – 1st. Three gr. of Tartar Emetic were
thrown into the Veins of a Bitch – Soon

er she had several loose stools - Wt. were 93
ow - She became senseless, with a small
lse - great coldness - was convulsd & died.
ly 4 Grains of Tartar Emetic were thrown
to the Veins of a Bitch - which soon pro-
ced Vomiting, Convulsions & death. Dur-
g Vomiting, she was very cold. Her heart
Lungs after death, were found quite
ld. —

The Degree of pain is diff. according
the kind of Inflammation. In the adhesive
s dull - acute in the suppurative - much
minish'd by suppuration, & increasd to sore
ess in the ulcerative. —

When parts are brought into close con
tact, such is the effect of the living prin
ciple that they frequently unite. Thus the
lips of a wound are joind by the 1st inten
tion, the chin sometimes grows to the breast,
the Tongue to the Lips &c. — The Testicle
of a Cock too put into the Belly of a

94 Fowl, will adhere to some one of the -testines & forming vessels will live & be nourished - a Tooth inserted into the Comb of a Cock unites & grows - On injecting the Comb, the vessels of the Membrane lining the Tooth will be injected also - Fluid substances as water in Dropsy, are not capable of such union, but are preserved from putrefaction for a very long time. Union by the first intention must never be attempted, where there is much contusion or laceration, nor where there are extraneous bodies in the wound. In all such cases suppuration must take place, to renew the parts, repair the injury & expel the extraneous matter.

The surface of the Lungs easily runs into the adhesive inflammation, but

air Cells are more susceptible of the suppurative.

In Erysipelatous Inflm the humour formd by extravasated Serum chiefly there is little disposition either to adhesion suppuration, except when tis deep seated ere indeed suppuration sometimes takes place but being not limited by any previous adhesions, the pus is widely diffusd, & generally followd by mortification. This is generally the case in the buttocks. — In women after Child-bearing, there is some degree of erysipelatous inflammation with frequent partial adhesions in the Abdomen, & this forms puerperal fever.

In attempting to cure inflammation the first thing is to ascertain the disposition. A Gentleman with a sore shin had a solution of Corrosive Sublimate applied which thickend the Slough — On enquiry,

 his constitution was found extremely irritable & his sore was cured by chewing of opium.

Bleeding is required in inflammation when the action of a part is much increased while the Animal powers are strong; where the pulse (except in cases of vital parts being affected) is full, hard & quick; & where the urine is in small quantity & high-coloured. If it be pale & in great quantity, bleeding will generally be improper. –

Ought blood to be taken from the left arm when the right side is affected & v. versa? If so, on what principle? –

Those medicines which excite nausea are most proper in inflammation. We ought however to stop short of vomiting which is an effort of the Constitution to overcome the depression of nausea.

rging debilitates so much that Drop-
al Patients have sometimes died in ipso
ie. It is often useful, but where the action
e part is violent while the Constitution
weak & irritable, Bark is necessary, &
: purgatives. –

Local applications produce 4 effects – 1st Im
ediate – 2dly by repulsion – 3dly by derivation,
hly by Sympathy.

The 1st has often the appearance of a chang
he 2d can take place only where the inflam
ation is constitutional & the pain is liable
fix on any other part – Gout is an exam
le. – When the constitutional disposition
roduces local action that relieves the con
titution, an artificial action, of a different
pecies can be of no use in relieving the
isease. – By repulsion the disease is some
imes brought from a part less vital, to
ne more so – Hence 'tis to be avoided in

gout, tho' local applications are not a
has been falsely imagind fatal in Gonor
-rhoea.

The 3d. effect viz by revulsion, is where
the action ceases in one part & begins
in another, not from any transition of hu
mours, but from a change in the place of action.
~~as has been ridiculously tetied~~

Hence Blisters cure deep-seated pains, &c
napisms applied to the feet, remove deli
-rium, & vomits discuss inflammations
the Testicle.

The 4th. viz Sympathy is a most powerfu
agent in the cure of Disease. Thus venereal-
nodes are cur'd by mercurial application
to neighbouring parts. The action excited
these is communicated to those, & a cure
is thus performd. —

A Caudle applied behind the Ear he

Lungs and ophthalmia, not however by
sympathy but by derivation. — —
Simple irritation produces at first adhe-
only not suppuration tho this takes plac
wards. It has been supposd to arise from
admission of the air to internal cavi-
, but this is very doubtful — for it wd
ce place even in vacuo. Besides where
is diffusd over a whole cavity, as in Em
ysema, no suppuration takes place till
cavity be exposd to the atmosphere — then
deed suppuration takes place, not from
e Stimulus of air, but of Imperfection. Is
is proved? May not the atmospherical air
different from that in the cavity from
mphysema?) In wounds of the abdomen
f a fowl, adhesions take place very sud-
enly between the edges of the wound &
me one of the Intestines — by which the
fn is confind, for if these do not take

place, infn. passes over the whole abdo-
men.

In some birds the air has a free com-
-munication from the Lungs to the Cavities
of the bones & the abdomen without any ap-
-pearance of inflammation.

Violent action does not always
produce suppuration as in gout; it frequen-
-ly produces Gangrene. If the breasts or Tes-
-ticles inflame quickly, suppuration often fol-
lows & produces a favourable event. It is
more easily excited in the internal ~~Cavities~~ nasal, the
Cavities. —

Suppuration tho preceded by redness, pa
& swelling certainly takes place without
any breach of the Solids, which however som
deny.

Suppuration sometimes comes on withou
any perceptible inflammation having pre

ded, as in indolent tumours - Swellings
the Lymphatic Glands, Tubercles, suppura
n of Scrophulous Joints, Lumbar abscess,
oscess of the Hip-Joint. - They come on with
thickening, & the matter is somewhat diffe
ent. It is mixd with a curdly looking
bstance, which seems to be the Coagulable
ymph free from Serum. Opening such suppu
ations is far from curing them as in cases
common Inflammation - for the inflammati
n which ought to have preceded, now fol-
ows the Suppuration & diffuses itself on
very side. The specific disorder neverthe
ess continues.

<u>Pus</u> I consider as a secretion. It is formed
very plentifully in the various internal fa-
nals & is the same in all. It is not pro-
duced from the stagnation of effus'd & ferment-
ing fluids (blood ex.gr.) but is really secreted.
When view'd by a Microscope, it shows a

number of round white Globules swimming
a fluid like Serum, for it coagulates by heat
The proportion of the Globules depends on the
health of the body, & is greatest in the most
healthy pus. It is sweet & mawkish, differ-
ring from every other Secretion. From what-
ever surface it proceeds it has the same
taste. – The chemical Analysis of pus can
never throw light on it or every animal Sub-
-stance gives a similar precipitation. It
always partakes of the quality of the part
from which it proceeded & is varioloos or
venereal &c. – It never stimulates its
own sore – except when it contains extra-
neous matter. Indeed a sore running its
natural Course is not a disease but the
consequence of one. If its progress be in-
-terrupted, it yields not pus but sanies,
which is thinner & contains all the

to of the blood that are soluble in wa

Pus is sweet when it comes directly from Abscess, but if exposd to the air, as in lungs & rectum, it becomes acrid & putres-t. In Erecypelas too where the solids incline putrefaction, it also has a greater ten-ney to putrefy. In many diseases too, es-xially of the bones, it becomes offensive om an admixture of extraneous matter, g blood &c. — Pus itself is so far from eing offensive or the cause of irritation, that t sometimes works it's way down from the ons to the thigh before it causes any irri-tation.

What is the use of pus? — Is it to carry ff humours? to prevent diseases both local general? It is certainly useful both by ncrustening sores & by throwing out extrane us matters, but why is it formd on intern al cavities? We are still ignorant of the

 real use of pus. –

Parts useless or dead are absorbd. (e
& the Alveolar processes are examples.
Parts weakend too are apt to be absorbd – hen
the gums are absorbd after Salivation. Any part
by pressure may be absorbd – Thus aneurism
produces an absorption not only of the soft part
but of the bones themselves. Encysted tumour
produce absorption of all the parts between
them & the skin – This is called Interstitial a
-sorption. – When the substance that presses is
a living one, absorption always takes place
nearest the bone – A Soldier had a solid tumor
in the brain between the foldings of the pia
Mater – It was oblong, & above an inch thick
Irritation was conveyed first to the Dura
Mater which was absorbd; next to the Skull
which was also absorbd along with the
Scalp so that if the man had lived, na
-ture would have relieved herself. –

sure from without produces thickening
s; but from within, ulceration & absorption
bare pressure of matter formed is sufficient
produce this effect - & the nearer the pres-
ure is to the skin, the quicker is the ef-
t. - A boy's belly after inflammation be-
en to swell & point in different places.
re was evidently matter in the Abdomen
& it did not fluctuate. The urine was per-
ectly transparent. An opening was made
ear the sternum cutting the rectus, and a
uantity of matter escaped but the Boy died.
An opening, a little matter was found
ose in the abdomen; the Liver adhered to the
Diaphragm, but there were no adhesions
on the fore part. The absorption had quite
destroyed the peritonaeum, & had dissected
from the inside the recti & transversi
Muscles.

Ulceration is more readily produced to

allow the passage of a substance from the body than that of one into it. - Bones are subject to ulceration - & sometimes while that is going on in the inside, ossification continues on the outside, producing an enormous size as in spina Ventosa.

When an intestine inflames, it commonly adheres to the neighbouring parts & frequently produces ulceration. The matter forms instead of penetrating the thin Coats of the Intestine, penetrates the peritonaeum, & the omentum tho' stuffed with fat - then the abdominal muscles, & the skin so as to make its way outwards - This is another remarkable instance of a disposition to go outwards. It finds more difficulty in penetrating the skin than any other part - Hence great distention & acute pain. - In whitlow, the skin is hard

ough, so that the pus penetrates very slowly, & indeed the skin is always penetrated with iculty. In such cases the part ought to be d open immediately, & poultices continued inwards - The new skin is sometimes forced t by the tightness of the old hard cuticle & harotics are applied to it, but very im- perly, on the supposition that 'tis fungus. - Ulceration sometimes removes parts without uch irritation. Parts newly formd are the st subject to this accident - Hence Anson's n lost many of their callus's & cicatrices.

During ulceration the edges of the wound ntinue ragged; the pus continues to be se reted, & old parts are carried away; but - Granulation the edges appear smooth, the us diminishes in quantity & new matter formd which appears over the surface ke little heaps. The thicker & smaller they are, 'tis the better -

108 No internal canal will granulate in consequence of suppuration, unless there is breach of Solids. Deep-seated abscesses are apt to turn fistulous, because granulation requires exposure. Sometimes however this formed without either exposure or a breach of Solids. Case – A short man aet 50 broke his thigh-bone which did not unite either by the Extravasated blood, or by the Coagulable Lymph thrown out from inflammation. After death it was found that Nature having failed in the 2 first attempts to unite the bone, produced Granulation, but in vain.

Granulations are formed by the Exudation of Coagulable Lymph & are themselves extremely vascular – They always partake of the qualities which distinguish the

ce where they are formd. –

Granulations are convex, the ~~conv~~ reverse
ulcers, & are of a florid red colour with nu-
erous points. When the red is livid, there
a bad state of the part & the circulation
languid. The position of the body some
imes alters the colour – A strong healthy
an had a broad sore on his Leg, & it
anged from a florid to a purple red ac
rding as he lay or stood erect. The ves
sels seem less able to bear the weight of the
ood than the others.

Granulations are sometimes soft &
pungy, but more generally the healthy ones
re firm & have a great tendency to unite
together. A Granulation from the Dura ma-
er united thro' a perforation of the Skull
ith one in the Scalp so firmly that much
lood was shed in making the separation.
Morbid Granulations generally happen where

110 the habit is irritable & liable to fever. Does Suppuration & granulation take place in every wound not cured by the first intention? No; for wounds in the skin after the adhesive inflammation heal by a scab which sloughs off. & matter does the same on pustules of Small-pox - A blister if the cuticle be not removd will scab in the same way; without the cuticle, it ulcerates.

The use of granulation is to produce a cicatrix. This is more easily done where the parts are soft than where they are hard & covered with little besides skin. Hence diseases of the skin are ill to heal. — The contraction of the granulations continues till the cicatrix is formd - 'Tis greater at first than afterwards! Bandages in healing

mps are useless till this contracting
wer begins to exert itself. — Skin is at
ngth produced, but whether from the granu-
tions, which are quite deff.t or from some
e matter tis very difficult to say.

When the old skin is sound, the new
egins from its edges — in other cases, from
e centre of the sore. If the neighbouring
kin be loose, very little new is formd — hence
t appears tense, while the edges round are
uckerd — but on the scalp this is not the
ase. The tense skin gradually becomes
ore loose by motion which stimulates the
art to take away those additions which are
nnecessary — Mercury may be given at the
ame time to aid the stimulus of motion. The
kin & granulations have both less vital
ower than the rest of the System — & the nu
erous vessels that gave the red colour, are
ther taken away or converted into lympha
tic arteries by compression —

 Every part of cutis is cover'd with cuticle which is very thin & shining. 'Tis formd very readily by the Cutis, much more so indeed than the Cutis is by granulating surfaces. — The rete mucosum forms slow-ly & in some cases never, as is seen in Negroes after wounds & blisters. How is it seen? —

Various disorders affect the constitution while the different operations that are requisite for healing wounds, are carrying on. Fever, Lock Jaw &c. The last generally happens to Patients appearing to do well, often when their wounds are almost heald. — Wounds of the ankle, wrist & Elbow are not so dan-gerous to the Constitution as those of the Knee-joint, hip or Loins. Why? Vital parts are the most dangerous seat of wounds for

-cous reasons. - Hectic is a frequent
-sequence. - Is this owing to the absorption
-ered pus? If so why does it not follow
-ry large sore? We have no proof that more
absorbd in one than another. - But Mr H.
-s told you that pus exposd to the air is
acrid as that long confind in an inter-
-al part, exposd to the full heat of the hu
-man frame? -

2dly The matter of Buboes tho' very acrid is
often absorbd without producing hectic. -

3dly Matter formd in the veins is likewise
absorbd without hectic.

4thly Hectic is actually often cured while
suppuration & consequently absorption conti
-nue. - Hectic seems therefore to depend
on an irritation of the constitution from
the affection either of a Joint or of a vital
part - Thus far the opinion is the same as
that against which John argues, for every

113 one allows that the absorption of pus is hurtful only by irritating the Constitution - but he adds - the Constitution being conscious that she cannot perform a cure & being at the same time perpetually tea to do it, falls into hectic. - Luminous words!! You almost burn the conscious pape where takes place tho' the wound be in a place not liable either to convey irritation or to slow healing, whence does it originate? Perhaps it may be the primary disease & must be healed first.

Fractures.

These are solutions of continuity in a bone by which many vessels are ruptured, so that the space is fill'd up with blood. There is always some Laceration of the soft parts. The extravasated blood being alive unites with the torn extremities, a slight inflammation comes on, & vessels are either cor

ued thro' this from the old parts or new the bony
es are formed. Cartilage is first formed, then
ne. The only thing for the Surgeon to do
to lay the parts as near each other as
sible. Nature will do the rest. The pa-
nt ought to be laid on his back, not
side. A patient who had two suc-
sive fractures tried both methods, & pre
red the former.

Sometimes even in simple fractures
ome of the extravasated blood loses its life,
r some of the internal lacerations do not
eal readily; & in either case suppuration
ill come on. Room must be left for the pus
caping thro' the dressings. — Compound frac
ures, where the Lacerations are very con
siderable, ought to be treated as much as
ossible ~~by the first~~ like the simple. While the superficial
arts suppurate, our object ought to be, to
unite the internal ones as well as the bone

 by the first intention. For this purpose poultices are injurious as they expose the limb to daily motion - It ought to be laid on oild silk & covered with cloths wetted by Goulard.

The pleura is more subject to inflammation than any other investing membrane, so that hardly one out of 50 reach the 50th year without adhesions. They are more or less partial & sometimes give neither pain nor inconvenience. It as well as the peritoneum may be inflamd while the substance of the Lungs & Intestines is perfectly sound. This however is not the case with all the investing membranes, for the tunica vaginalis is never inflamed without affecting the Testicle.

When the inflammation of the pleura goes beyond the adhesive, it produces pus

ch being discharged into the cavity of the
Thorax produces Empyema. Sometimes
matter is discharged, & tho' suppuration takes
ce, the wound closes & the patient reco-
ers. How? The Lungs do not adhere to the
cura, but are collapsed by the external
r rushing in. — What becomes of the air con
nd between the pleura of the ribs & that of
he Lungs? —

In Emphysema, air escapes from the cells
the Lungs (which are opend by a fractured
b) & passes into the cellular membrane.
is wrong to attempt the repulsion of this
r by compression — An incision $\frac{1}{2}$ an inch
ng should be made at a distance from the
racture, to avoid the inconveniencies of a
ompound one — But if there be blood or mat
er effusd & threatning danger, the opening
must be made nearer the fracture. —

When the peritonaeum is seizd with erysi-pelas, is bleeding proper? When pus has been discharged into the cavity of the abdomen, may we open it & inject warm water? The disease is fatal, & requires any remedy however dangerous.

Why does the ~~inflam~~ peritonaeum inflame after an action so natural as that of child-bearing? Not from the uterus for it is often found sound after death, but from the stimulus of imperfection. When a sword passes thro the peritonaeum so as to wound an intestine, the external wound frequently heals by the first intention, while the intestine adheres to the part that comes first in contact. Here the Evil spreads no farther – But where the external wound does not heal, even altho' no viscus be wounde

stimulus of imperfection will diffuse
inflammation over the whole abdomen.
some cases of puerperal fever, a circum
scribd abscess is formd at the lower part
the belly - perhaps because the broad &
rund ligaments are chiefly affected: the tu
mour ought to be opend.

Inflammation of the same kind very
requently attends tapping especially when the
heration has been repeated to the 3d. or 4th
ime. If it do not produce suppuration the
atient may survive several attacks. The
ame operation in a sound abdomen would
n general produce no inconvenience, as the
wound would heal by the first intention.

In the femoral Hernia there is not often
n inflammation of the peritonaeum, because
he sides of the sac are compressd & made
to unite. But in the umbilical hernia

There is more risk of inflammation. The Epiploon ought always to be made the basis of the inflammation & suppuration which are required to unite the wound. Its adhesions may prevent the inflammation from spreading far into the peritonaeum.

When the wound is so large as not to unite by the first intention, sutures ought to be employd, taking care however not to bring the stitches beneath the peritonaeum, for in that case, like every other extraneous body they will lead to suppuration.

A crooked woman too small even for the Crotchet submitted to the Caesarean operation. The Child was taken out alive, & the uterus immediately contracted. The lips of the wound were brought together by uninterrupted suture, but the Mo-

man who had been much depressed during
the operation died soon after it. The
small Intestines were found adhering round
the cut edges of the uterus & the lips of the
wound were not in contact. There was
a quantity of extravasated blood in the ca-
vity (which cavity?) so that the Suture
ought not to have been applied till the
bleeding stopped.

Wounds of the Joints are very dis-
agreeable, because they very generally suppu-
rate & every process is carried on slowly.
When healed too the effects are very disag-
reeable as Anchylosis commonly remains.
This is a better effect than takes place in
those cases which require amputation. Our
first care must be to heal by the first
intention, for which purpose a rolling ban-
dage is preferable to a suture. —

121. The eye sometimes suppurates when no artificial opening has been made & the anterior chamber is sometimes thus affected without any disease of the posterior. There is the same appearance as in an opacity of the Cornea, particularly in the lower part in form of a line. If there be no appearance of absorption, the matter ought to be discharged assoon as possible that the wound may heal by the first intention.

Mr K. was attack'd with inflammation of the eye in cold weather. The sclerotica became very red, but the cornea remaind clear. There was general Lassitude & the pain darted thro' the back part of his head. Leeches were applied to the Temple, blood was drawn from

arm of Goulard was from time aft
ed to the eye. After some days a white
ot appeard on the upper part of the Cornea
n a short time a fluid was obserd
hich gradually increasd. Some time was
ust in hopes of absorption, but that not
aking place a puncture was made be
tween the Cornea & Sclerotica. Bleeding &
he bark being usd, after 5 days the eye
ppeard flat, the iris & pupil being hardly
isible. On the 6th day the Cornea was
illd out & the opacity lessend, but the sight
was lost, notwithstanding the use of ☿.

The inside of the Sens is different from
hat of many other Canals, as it is subject
o the adhesive inflammation as well as to
uppuration. This is seen after amputation
compound fracture, mortification &c.

1123. After bleeding, inflammation sometimes takes place. It has been attributed to the pricking of a nerve, Tendon, Fascia &c. but is in fact is owing to the wounded vein's not healing by the first intention, so that the stimulus of imperfection produces inflammation & suppuration. Adhesions generally take place a little above & below the orifice, tho' from want of them, the matter is sometimes diffused & proves fatal. Erysipelatous inf.n sometimes follows the prick of a Lancet & of a pin, but this must not be confounded with the inflammation of a vein.

Suppuration of the Veins often kills horses whether from the inflammation's being extended to the heart, or from the mixture of matter with the blood, is hard to say.

e orifice therefore ought always to be
t with the utmost caution. In venal
scesses adhesion, suppuration & ulceration
metimes are found going on at once. In
ne parts of an Arm examined at St. George's
spital, adhesions were found, in others, sup
uration, in others, ulceration opening all
ternally. In consequence of an opening
the Vena Saphana a chain of abscesses
ormed from the foot to the thigh. They were
end, but the patient died.

If adhesive inflammation does not
ake place to prevent the diffusion of the in
flammation & of the pus, there is great danger
f death. The orifice ought therefore to be
loid with the utmost caution. The second
leeding is thought more dangerous in this
ay than the first, but 'tis only when the
rifice is not properly closed. Lint or

 cloth so applied as to allow a little blood to come out, is the best compress.

If the infl.n come on above the orifice the compress ought to be applied above that so as to produce adhesion, or by contact to prevent the ascent of the pus. When suppuration has not taken place, its most proper to apply the compress below the inflamd part, thus preventing the blood from reaching it.

The ~~veins~~ arteries suppurate seldom on account of the facility with which they undergo the adhesive inflammation. I H. has seen it only in consequence of Mortification.

In hydrocele, the most common state of the disease is an effusion of water into the cavity of the Tunica Vaginalis. Sometimes there are hydatids on the out-

e of it - sometimes the anasarca ex-
es to the cells of the penis, producing
ymosis. Sometimes the testicle is diseased
metimes not, & in the last cases the water
y be let out with safety - The great ob-
ct is not merely to evacuate the water
t to obliterate the Sac, which can be
ne only by adhesion or suppuration, for
aling by the first intention is hardly to
e expected.

A radical cure has been attempted by
1st introducing an extraneous body thro' a
mall wound.
2dly By stimulating Injections.
3dly By the Seton or double tent or Caustic.
When caustic has been applied there has
een an appearance of sloughing, but this
generally only Coagulated Lymph. Some
times there is a partial sloughing indeed.

A Man labouring under hydrocele was inflamed suppurated & broke like a common abscess. The wound was enlarged, & the testicle appeared of an increased size, so that the Surgeon thinking it Cancerous determined to extirpate it. But the suppuration appearing to general for Cancer, so that I. H. by a finesse saved the testicle which time cured very completely.

When a hydatid is laid open, there is seldom that dull pain & sickness which attend the other operation. — It is not easy to distinguish these from water in the sac. nor the last from a soft pulpy state of the swell'd testicle. When the tumour seems flat tis testicular, when pyramidal, tis hydrocele.

The situation of the testicle ought always to be ascertained, because wounds of it tho' not invariably deadly are generally

zardous - Yet I H. wounded a testicle
left times without danger. When the tumour
in the Testicle, pressure on any part pro-
duces pain, when its hydrocele, the pain
limited to the place where the Testicle lies.
When its necessary to repeat an incision
we ought not to take the old cicatrix for
guide, because the Testis sometimes ad-
heres to the inside. In this way I H. cut
the Testicle once. —

Pain in the back, Lassitude, sickness &c.
are the symptoms which generally attend the
exposure of the testis. The opening for curing
these should be made about the middle of the
tumour. - Whether tent or seton be employed,
its advisable to confine some of the water
till the suppurative process takes place, by
means of which the adhesions will be more
uniform & regular — By letting out all the

water partial adhesions only take pla
so that the disease is very apt to return.
The caustic is the best mode of opening
the tumour when it penetrates to a suffi-
cient depth - because it produces instant
inflammation & suppuration, but when it
does not, there must be a puncture wh
is done with more advantage at the be
ginning. - The best method is; Make an
incision 3 inches long into the skin & have
let out all the water, stuff the sac with a
poultice - which keep in with Lint - The
poultice will be pushed out along with the
matter, & will not be so apt as Lint to be
entangled with granulations, preventing
at the same time partial adhesions. Lint
of old will answer nearly the same
purpose. -

ut too violent inflammation may not
llow the wound, Linnen welled with bran
should be applied ~~frequently~~ (never suffering it to dry!) to the Scro-
um, which ought to be supported in a trus
24 hours after the operation the Patient
seizd with rigors, restlessness & pain in
e back - Sickness, Lassitude, quick pulse, hea
thirst - The scrotum swells & throbs painful
. The Testicle too, which must be suspended.
he thickness which remains does not arise
rom the Testicle merely but from the Cellu
ar Membrane also, & is often lessend by
al ointment:

Hæmatocele is where blood has been
ffusd into the cavity of the Tunica Vagina-
lis & leaves both Coagulum & bloody serum.
t need not be distinguishd from Hydrocele
ut should be from Sarcocele. - 'Tis not
understood & is sometimes compounded wt
Hydrocele. —

131 Bones are subjects to similar laws in health & Disease, with the other parts. Pressure indeed affects them differently from the soft parts, because they cannot yield to. The various firmness of bones gives variety to their diseases - The softer are exposed to scrophula, the harder to venereal Complaints. The increase of size, in many cases, keeps pace with the Disease. Hard bones are generally more easily cured than soft ones, because they are more subject to Exfoliation. The exposure of bones very commonly produces death in them. Hence bones of the head heal more readily than those of the Leg. -

What is erroneously call'd a caries of a bone is generally nothing but an ulcer. What is call'd moist & dry caries, means only that a bone is not apt to exfoliate

that it is. —

The time requird for healing fractures diff. in diff bones & various ages. Young umals heal soonest & bones of the arm nite sooner than those of the Leg. — Sometimes the great number of points prevents the nes from coming into contact, & thus re ds ossification. In some instances, the nes will not unite till the parts are put n motion, but care must be taken to de end the parts by bandages, iron &c. —

When the bones do not unite at all, or when he ends form only a soft cartilaginous sub- stance like a Joint, the soft parts must be awed off that the bone may unite as after imple fracture.

Bones are subject to an inflammation hich from its nature may be call'd ossific. The pain is dull exciting sickness rather than stimulating the Constitution — Whether

The peculiarity of the pain is owing to the compression of the Nerves or to their na-ture being peculiar, J. H. does not know. The swelling which follows inflammation is undoubtedly owing to the deposition of osse-ic matter, but is taken away by absorp-tion during ulceration - This however is not very frequent in the bones - tho' more so in the periosteum which is likewise more sub-ject to inflammation than the substance of the bone. Suppuration is cured by the same steps as in the soft parts - Granulations are produced, these are converted into Cartilage & then into bone. When suppuration takes place in bones of the head, a membranous not a cartilaginous substance is intermediate.

Suppuration may take place in 4 ways.

1st Between the bone & periosteum;

In the substance of the bone,
In the medullary substance, &
In Joints.
The first is the least dangerous. The part
ought to be laid open so that the matter may
t freely out - Granulation will produce a
indly healing. —

When matter is formd in a bone, ossific
matter is generally added to the outside of it.
uery - If this strengthen the bone, does it not
lso render the escape of the matter more diffi-
cult? —

When the suppuration is superficial, the
me ought to be laid bare by a free incisi-
n, but no integuments ought to be removd.
Sometimes even exposure is insufficient to pro-
duce exfoliation, in which cases, Cautery is
requisite. — Caustic or the Trepan is even
more necessary where the Abscess is deep-

-seated, & when the bones fall into an
-dolent state stimulating dressings are requi

The matter proceeding from an ulcer, par
-ticularly a fistulous one, has generally a
great tendency to putrefaction - It lurges
sometimes corrodes the probe. - Is this owing
to an increased quantity of Volatile Alkali.

When the patella is broken, the ends
the bone ought to be brought into as close
contact as possible - by stretching the Limb
& by bandages which do not restrain the
action of the Muscles. It ought to be mov
by the Surgeon to prevent the too great lux
-uriance of the uniting callus - As soon as the
callus is fully formed the patient should be
placed on a table, & be directed to move
his toes forward. Weights should be gradu
-ally added to his feet & similar motions
repeated - In this way J. H. recovered lad

who having broke both her patellas &
ving their extremities improperly united,
t the power of her Muscles. –

The olecranon may be considerd as a
xd patella to the ulna which it is des-
ned to move. When broken, tis drawn up
the muscles inserted into it. We must
event this by Bandages, & as soon as the
t union has taken place, we must by pas-
ve motion prevent stiffness & the other bad
ects of rest. –

Exfoliation is not well understood. The se=
aration that takes place is not in consequence
rottenness in the part thrown off, for when
separated, tis fresh. – When a piece of bone dies
t adheres nevertheless to the living part & sti-
mulates. In consequence of this stimulus the
surrounding living parts of the bone inflame & become more vas
ular – The surrounding parts also inflame &
take on the ossific disposition to a great ex-
=tent. –

137 The earthy part of the dead I suppose bone is next absorbd, still however it adheres by means of the animal substance of the bone. The next step therefore is to absorb this, & the absorption beginning at the circumference is continued to the Center - Next, before the absorption has reachd the Centre, granulations arise at the circumference, from the living surface, & these push off the dead one. The granulations however sometimes push over the edges of the dead part, & growing osseous confine it - If such cases be left to themselves, the same process will take place as in other extraneous bodies, viz, pressure will produce ulceration &c. - The first appearance of Exfoliation is a Spongyness - then a groove in the direction of the fibres surrounding the dead bone, while the surrounding living bone becomes more porous.

ne of the living bone is evidently absorbed, n its becoming softer & more vascular. The d one too shows some traces of absorption ving taken place.

Hard bones & the hard parts of soft ones ex- liate most readily, because they have few essels. Indeed tis hardly possible to lay such bone bare without producing Exfoliation. There is a pulsation commonly observed in e Granulations, greater or less according to rcumstances. The General Exfoliation is in neral more mild than the Scrophulous.

Potential Cautery favours Exfoliation only as far as it kills the bone, but the Actual Cautery does more, for it likewise excites flammation in the part.

When the part to be exfoliated is not thrown out but encrusted in the manner formerly de- ribd, there is an odd appearance of old bone in the midst of new & sound parts. —

139 Cartilage is somewhat intermediate be-
-tween bone & soft parts. Sometimes tis de-
-tined to be changd into bone, as in the Epi-
-physes &c. Sometimes tis permanent as in
the Joints, nose, Ear &c. Its powers are very
weak, because the Vessels are few. When pro-
-tuid, the union is not cartilaginous, but li-
-ney. It hardly admits ulceration, however the
Cartilages of Joints are absorbd by the ab-
-sorption of other parts. Hence in white swe-
-lings where suppuration takes place, the
absorption of Cartilage is nearest the surface
of the bone.

Cartilages do not granulate; but from
the soft parts shooting out on each side, the
skin is drawn over them like a purse. —

Do they exfoliate? not in general, for
they may be cut or pared without any
such effect, but there have been instances

em becoming dead & black, & being thrown
with a portion of bone adhering to them.
hose of the Ribs & Larynx do exfoliate, but
y are changd into bone by preceding inflam
ation. The whole Arytenoid Cartilage has
foliated in the form of spungy bone.—

All the Joints of the Animal Machine
ffer widely from those of Mechanics—That
the lower Jaw in Carnivorous Animals
proaches it the most nearly. By this means, mo-
on has more various directions, & fewer joints
e necessary.—The Ligaments wh confine the
int act as pivots.

The strength of a Joint depends on its
uscles, but the depressors of the lower Jaw ra-
er tend to dislocate it. When people say
ey have weak joints, they mean they have
eak Muscles.—Strains are produced not only
y weakness of Joints, but by inattention
o. One walking on a plain, & descending

unexpectedly by a sudden Jerk, or comin
down a stair & expecting to descend or the
reverse & the thing not happening, there is
a strange surprize. —

Striking the toe sometimes produces
strain — Thus — The centre of motion is lost, by
the struck foot's not coming up in time. So
of the muscles unprepaid for this loss of Ae
-quilibrium are forthwith sprain'd. —

Dislocations proceed either from the
Muscles being off their guard, or being over
-come by a superior force. Crooked spine
& knock knees proceed from a weakness
of the muscles, as they are rarely seen in
strong muscular people. —

In falling the muscles are instinctiv
-ly rendered rigid. Toss up a new-born
Child, it's muscles will be relaxd; let it
descend quickly, they will become stiff.

ut the Cat is the most remarkable in
ence. Throw it in any direction you please
always turns & alights on it's feet. When
person jumps from a Coach which is
ving fast, the sensation is exquisitely
agreeable, & sprains frequently & fractures
metimes happen. —

In most strains there is an ex-
travasation of blood into the Cellular Mem-
brane (the blood coming from the Ligaments) - There is
swelling inflammation & pain - The first
pends on 2 Causes viz. The increase of Syno-
a, & the Extravasation - Rest & the common
emedies are proper. —

Dislocations sometimes produce a kind of
tificial Joint - This however can happen only
here the head of the dislocated bone is op-
os'd to another bone - Thus the head of the
emur is opposed to the Ileum & that of the
humerus to the Scapula. —

 The part of the bones that is pressd, is absorbd, the adhesive inflammation takes place & a kind of Joint is produced.

Joints are more subject to suppuration than any other circumscribd Cavities. The spontaneous inflammation is more dangerous than that from accident. Rest is essentially requisite - Cupping, bleeding, blisters above all, as soon as the Inflammation becomes stationary - sea-bathing. The loose pieces of Cartilage, Ligament or Bone, found in the Joint, proceed probably from the extravasation of blood. -

As joints are secreting surfaces, adhesions do not very readily take place but long inflammation does now & then produce them - They are soft where there a Capsular Ligament, but bony in all other Cases - as in the Vertebræ. -

e ribs often adhere by lateral anchylo-
s - but this is hardly felt, in comparison
the Anchylosis between the radius & ulna.
e vertebra anchylose with each other & the
um with the sacrum. The capsular Ligament
metimes forms anchylosis & this is worst
ale, for the motion of the Joint is totally de
oyed.

A Joint suppurates with difficulty as
composd of 3 indolent weak parts viz bone
rtilage & Ligament. The inflammation too is
ixd being partly adhesive, partly suppurative,
the ulceration to bring the matter to the skin
extremely slow. The parts thicken & inflame;
ut opening the Joint is dangerous, having
tendency to produce hectic.

Gun-shot wounds on account of the contu
on have little disposition to heal by the first
tention - hence Suppuration & sloughing. The
njury done to an intestine or an artery is
ot always apparent till this slough comes a
way.

 The velocity of the Ball being great, there is little tendency to inflammation, & less hemorrhage than in other wounds. The depending orifice, especially if the Ball entered by it, is always soonest healed, so that it requires art to keep it open.

A Ball besides wounding the superficial parts, may break a bone, may tear an artery or may penetrate some of the circumscribed cavities. – It has been universally recommended to enlarge the wound, but this is always improper except when it leads to something else, as to the expulsion of extraneous matter &c. – Four French-men were wounded at Bell-isle – 2 thro' the Chest, 1 thro' the Elbow & 1 thro' the Scapula & Deltoid Muscle. None of the wounds were enlarged & the Patients all did well.

In simple Gun-shot wounds viz where

soft fleshy parts only are wounded, there
seldom need of Surgical aid, but in com-
pound cases, that is where a bone is hurt,
an extraneous body carried in tis often ne-
cessary to dilate the wound or prevent it from
closing otherwise a Sinus is formd. the part
dilated by the Surgeon always heals more
quickly than the rest. - Those who talk of di-
viding parts for the purpose of taking off ten-
sion & relieving inflammation & setting them
at liberty seem to forget that incision pro-
duces those very evils tis meant to cure. -
When a ball cannot be followed as in the
face we ought to let it alone - opening the
skin does no good & balls often continue long
without inconvenience - Some indeed are ne-
ver found. - The red Line sometimes accom-
panying gun shot wounds is neither like
inflammation nor Extravasation so that the
nature of it is unknown. -

147 When the wound admits the finger, this will be better than either the Ball. forceps or a probe. When it is near the skin, if the skin be much bruisd it may be cut out, if not it may be left for suppuration. If it has past deeper & left two orifices, an opening should be made mid-way between them to prevent the abscess that will otherwise form.

A wound of the Liver is not so dangerous as one of an other intestinal part. Sometimes the guts have formd adhesions even after they have been run thro', but this cannot in general be expected. — Diff. symptoms distinguish different wounds. When the right Lobe of the Liver is wounded, the right shoulder is pain'd, & the left sympathizes with the left Lobe. A wounded stomach produces vomiting of blood & delirium; wounded Intestines, an evacuation of blood by stool

unds of the Kidneys give rise to bloody
ne, & lay the foundation of Calculus. Very
en the Liver will when wounded give pri-
ary symptoms only, but the Viscera contain
o extraneous matter as the Stomach &c. will
e secondary ones, viz. expulsion of the extra-
ous matter into the Cavity of the abdomen -
hesion, inflammation, pain, tension & death.
unds of the Ductus pancreatic. & Cholidoch.
oduce similar effects tho' more slowly. -
Sometimes 8, 10 or 12 days elapse before such
ffects take place, for when the parts are
ruised only, such a space is allowed for them
slough - The consequence of sloughing is al-
ways disagreeable tho' not always fatal, for
efore the part separates the adhesive inflam-
ation frequently takes place. A Gentleman
as shot tho' the navel, & the ball came
ut at the Spine. The sloughing did not

149 take place till 14 days after the acci-
-dent, when an artificial anus was form'd
& the faces passd by it - but this soon clos'd
& he recover'd perfectly.

Many recover after a ball has pass'd
quite thro' the Lungs, but few after a sword
or bayonet has done it. - Does not
this depend on the extravasation in the
former case being less than in the latter?
The wound too remains open & affords a
passage to any extraneous matter - Suppura-
tion does not take place so readily as in
other wounds of the Chest -

When the quantity of extravasated
blood is small, the absorbents will general-
ly take it up in time - when 'tis not,
the operation for Empyema must be per-
form'd. In a patient this operation tho
recommended by all the Eloquence of T. H.

as neglected & the Patient died - One of 160
cavities was found to contain 3 quarts of
d.

Ought an incurable limb to be ampu-
ed on the field of battle? The patient can
more easily removd & the bleeding more
ectually stopd - therefore when the hamor
or when the part hanes by a little skin
nage is so copous as to endanger life, it
ght to be done, but in no other circum-
lances - For few people in perfect health
an bear amputation - 'Tis safer after im-
ation & inflammation have weakend the
atient. - The Lungs & Intestines must be re
laced as soon as pofsible. -

Bleeding ought to be proportiond not to
e action but to the powers of the System,
therwise Debility will often bring on death,
'Tis more safe after amputation of the arm
han the Leg, & safer still after injuries
one to the head or Lungs.

 Bark is a valuable remedy after inflammation has subsided, or even during if there be any sign of debility. —

Tents are in general useless, for if there be an extraneous body it will form an abscess for itself & so get out - if the bottom of the wound be only foul, skinning over will be no obstacle to the formation of an abscess by which we will more readily reach the bottom. —

Injuries of the brain are external or internal - The external affect it by compression. Concussion - wound or loss of substance & want of due compression - How? What is this? —

The 3 first produce similar symptoms viz repletion, an interruption of sensation & voluntary motion - flaccidity of the muscles about the mouth & muscles, with an effusion of Froth. - The 4th produces Insensibility & restlessness.

...ulting from sympathy accompanies all the
...ves of the head except where Insensibility is.
...ves of the head destroy sensation, which is
...ceed by those of other parts. —

Concussion may derange the diff.t parts
the brain - So the effect the same, whether
hard body hit the head, or be hit by it?
..., if the velocity be the same. —

Eight causes may compress the Brain
t Beating in the skull - 2.dly Thickening of
bone - 6 Internal viz Water - Distention of
od. Vessels - Inflammation - Formation of
w - Extravasated blood - Tumour of the brain
elf. -

When matter or blood is situated in the
side of the Dura mater, it is beyond the
ach of the Surgeon - An operation here is in
fectual because the matter cannot always
e evacuated, & unsafe, for perhaps not 1 of
0 in perfect health would survive the prick
ing of the Dura Mater.

Mortification is very different from gener death - After this the vessels can be injecte & examined, but not after that. - The remot causes of mortification are either with or with -out inflammation. In young Animals inflam mation generally precedes it, or a fever of the hybrid or languid kind. - Debility produces it only where the action of the part exceeds its powers. Hence mortification is frequent in A -nasarca, Bruises, & frost-bitten persons. Heat must be applied gradually otherwise they drop off - Hunger, cold, old-age favour mortificati -on - The toes of tall people are subject to it especially.

Wine is not so useful as bark be cause it stimulate, i.e. raises the action without much increasing the strength. Opi- um may be useful both internally & ex- ternally by diminishing the irritability.

ifications & warm applications are
general hurtful. — Arsenic is a most vio
Caustic, not from any chemical, but from
poisonous qualities. — Dangerous to the
solution from the absorption of some part
t — Opium applied to a part an hour before Laws
diminishes the sensibility & makes the
ration more tolerable. — This was ascer-
ind by Expt. —

Parts the most vital slough the most
eadily — The muscles & skin sooner than the
ellular membrane; this sooner than the Li-
aments & these sooner than the bones. — Can
he brain slough? If the structure does not
hrent such an effect, Death anticipates
t. —

Parts about to slough appear dark-coloured,
ndry if exposd to the air — The separation con
lantly begins at the external edge — why? Is
t because the Skin separates more readily
han the Cellular Membrane? no: for bones ob-
serve the same Law. —

When large vessels are divided there is danger of a hæmorrhagy, tho' the degree differs in diff.t animals - The large vessels of quadrupeds seem to be more contractile than those of man. Of all the styptic remedies oil of Turpentine is the most efficacious. It should be applied on a Tossel of Lint to the bleeding vessels, their orifices being previously well wiped. Beat up with egg it has been taken with much relief in hæmorrhages from the Stomach. - One from the nostrum also was cured by an injection of it. Wherever it cannot be applied directly to the part, it should be given internally. -

An artery closes sooner when torn than when cut. The Miller's scapula mentioned by Chesselden proves this, & the farmers in castrating Lambs, tear the Testicle.

en Ligatures are applied to Vessels, ought
r parts to be included? sometimes they
ist, particularly in old people otherwise
elasticity of the Artery being lost, the li-
ture would slip. - I.W. often included the
ve especially the radial one in amputa-
ons of the forearm. - These arteries (the ulnar)
re more subject to the secondary bleeding
an any others. - After granulation tis dif-
cult to take up an artery - therefore it must
e laid open.

Aneurisms are treated by Authors
rth great indistinctness. Le Dran divides em
to 3 kinds, & Heister into as many kinds as
zes - Wounds of arteries must never be con-
ounded with them. - An Aneurism then is
a Dilatation of the Coats of an Artery from
disease or accident, proceeding immediately
from a disproportion between the force of cir-
culation & the arterial strength.

 Experiment on a Dog.

One of the Carotid Arteries was laid bare for an inch in length, & the Coats so much removed that it appeard transparent - The dog was killd in 3 weeks but there was no dilatation as the adhesive inflammation took place. The large arteries are most subject to aneurism both from their proximity to the heart & their coats being less muscular than the smaller arteries. - The Dilatation is sometimes regular & general - there is however reason to suspect that it more frequently begins at one side, both because the motion of the blood is unequal, & because different sides are unequally supported. When aneurism seizes the Curve of the Aorta, the dilatation will be upward in the course of the blood's motion; whe

Carotids, it will be outwards & for-
wards because there is less resistance; when
the subclavian, forwards; when the axillary,
inwards; when the Abdomen & thigh, for-
wards; when the Ham, backwards; when the
leg, uncertain as to direction, whence the
nes of the Leg are often diseased in the aneu
ism there. —

When the dilatation increases much,
ther the coats of the Arteries are thickend,
cellular membrane thickens & adheres
them. That part of the fluid most distant
rom the moving current, coagulates first,
different Laminæ can be traced in proportion
the duration of the Tumour. After disten
on has passed a certain limit, gangrene
rupture produce effusion which is some
mes followed by instant death as in the
Carotids, sometimes by inconvenience only.

 The disease if left to nature must
fatal either from the bleeding or from the
sequences of effusion into particular part
Mr Broomfield notwithstanding objects to
all kinds of operation because he says
Arterial System is universally morbid. H
says too that injections of dead parts ha
led to very extravagant notions of the
powers of anastomosing vessels. & from
case in which the operation failed he co
cludes that its advocates will cease to d
bet it. His two first positions are false
& his conclusion is a mistake. –

Mr Pott has candidly confind himse
to those symptoms which precede dissolu
-tion, & from them he infers the danger of
operating. In the popliteal & femoral aneu
-risms he prefers amputation not only from

morbid state of the Arteries above the aneurism but from want of collateral branches.

Still the operation may be performed not only with safety but with advantage,

when the disease has done no hurt to neighbouring parts;

2ly Where it is circumscribed & not connected with parts which exposure may render incurable - as the Bones.

3ly When there is distinct pulsation.

In very advanced stages, amputation is undoubtedly preferable. Therefore aneurisms ought to be extirpated quickly without waiting till the collateral vessels are enlarged. Whether or not the popliteal be so much dilated above the aneurism I cannot determine, as I don't know any principle to regulate opinion - but if it cannot be tied up after the operation, can it be easier to do it after amputation? The only thing then is to consider

whether there be enough of anastomosing vessels below the Ligature - The only Arteries that admit of doubt are, the Popliteal, Femoral, & Brachial - The rest have either sufficient anastomoses or lie beyond the reach of the Knife. - Arteries that may be tied up

1st. The Carotid above the Sternum;

2dly Any Branch of the external Carotid;

3dly The subclavian (after it passes the Scalenus Muscles) with all its branches;

4thly The crural after it has passed Poupart's Ligament & has given off its large muscular Branch. - 'Tis so difficult to take up the interosseal, outer & ~~inner~~ posterior tibial Arteries that amputation from this cause alone is necessary.

When the operation is to be performed we should apply a Tourniquet above the

mour, & making a Longitudinal incision
ger than the tumour, cut into it scoop
out the Coagulated blood - The inferior
face will be readily discoverd, but we
ust slacken the Tourniquet to discover
superior one - The Ligature should be
plied at least an inch above the Sac -
here a Tourniquet cannot be applied, the
rtery should be laid bare, & a Ligature
ed above & below the Tumour. Then the
e is to be dilated almost up to the
ghest Ligature, & being scoopd & cleand is
be left to slough off. - While the Artery
ed by the Tourniquet, black blood y.
es from below the Tumour, because
ere is, if not a stagnation, at least a slow
trograde motion.

Cases. - A young man had for 2 years
a pain in the Calf of his leg similar

 to a cramp. A Blow was given there soon after which a swelling appeard with pulsation - The operation for Aneurism was performd, & the patient appeard to go on well till the 5th Day, when the Artery burst out above the Ligature, either from it's being too tight or too low. Before the Tourniquet could be applied the Patient died. Tho' the Artery was found to be perfectly sound above the Ligature, this is the case from which Mr B. dissuades the operation. -

An Aneurism of the crural artery extending 5 or 6 inches in the thigh & of an oblong shape, was operated on successfully by Mr Broomfield Junr. -

Mr Martin also had the Operation for popliteal Aneurism performd & soon recoverd. - Where there are many Aneu-

ons, the operation is not advisable. –
To a fresh wound a poultice ought always
be applied & not dry Lint, which by the
coagulum of the Blood adheres & opens the wound
fresh. A Poultice is therefore most proper,
t they are generally made too thin – Male
ead & milk makes too brittle a composition
:- Boiling water pound on Lilseed meal
daubd over with a little oil is the best
m –

Abscesses are of every depth from the pim
le to the boil & psoas abscess. – They are
und or unsound. –

When the mouth of an abscess heals
p not in proportion to its bottom festu-
la is formd. – Sound abscesses may in ge
neral be left to nature, but in the tho-
ax, abdomen, brain Eye & Joints art must
first. The opening should be made at
the most prominent part. –

165 Abscesses are sometimes found in parts where they were not formd - Thus matter for in the Loins is sometimes found into the thy Gluteai muscles &c.

In the irritable inflammation, healing is very difficult - Substances that would increase irritation must be avoided - Bark, opium external & internal are proper - When the Gentlest touch is intolerable, Ol. Terebinthina has been sometimes applied not only without detriment, but with advantage. -

Indolent tumours generally arise from specific action in a part, rather than from any change in the Constitution - They are always attended with a thickening - which is of 2 kinds, viz - either of natural parts - or of newly formd matter -

e first of the call interstitial is more of
ed, the 2d. is more limited. - A wen is
(circumscribd tumour formd in the cellular
mbrane, the cells of which seem to be dis-
nded - ~~coagulata~~ chymus is an extravasation of co-
gulable Lymph into the cellular part of
lands. -

The deposition of calcareous Earth
ems to be an effect of the strengthening
nciple, but it often takes place where
can add nothing to the Strength as in
e Eye, the Arteries, the Testicles &c. -

The indolent tumours formd spontane-
usly have a consistence almost Cartilagi
ous - Hence they inflame with difficulty
when suppuration has taken place, ul
erate very slowly. -

The final cause of these indolent tu-
mours is either to form adhesions or to

que strength. – The exciting causes are various. 1st Long continued Cold. – Chilblains
2dly Violent action –
3dly Mechanical – as in the Tunica Vaginalis & ovaria, in Prolapsus. When pressure is violent it produces ulceration, when moderate & long-continued, it produces thickening. – Varicose veins too take place from it especially in the large vessels of the legs – Where it can be done, the varices may be cut out – but this is not often practicable. – Corns are produced by a thickened cuticle – as the Corn increases, it presses more & more on the parts below & so produces pain. – Before a Corn is pared, it should be soaked in warm water. When possible it should be cut out – but care must be taken not to wound the edges of the fulcrum otherwise inflammation there in many

s may produce mortification. If any sli
lant substance could penetrate the Corn
ns to excite inflammation & suppuration
e thickene part might be thrown off - This
ually happens sometimes from the bare
nuance of the pressure. -

In Barbadoes the peoples are very sub-
ect to humours in the Legs - They arise from
agulable Lymph diffus'd thro' the Cellular
Membrane without Inflammation - They
must be cur'd by - 1st Tar ointment - 2dly Ban
ages - 3dly Sea Bathing - 4thly Perhaps by
the Vapour of Oil of Turpentine. A man
whose scrotum was thickend sat twice a day over hot
water containing one or two Spoons full of
turpentine, & was cur'd. -

When worts are extirpated, they appear
like a cut Lemon from the mixture of new
increase of old parts. Medecines have
little effect & even Tar itself is useless. -

169 Suppuration must be avoided as it has tendency to induce Cancer. – They should be extirpated as quickly as possible but with much care as they are found adhering to the Carotid, the Temporal Arteries, the Jugular Veins & the Trachea. If they have a root that cannot be reached by the knife, Caustics are necessary. – The tumour formed by new matter is generally circumscribed & more detached than a Lymphatic Gland. It grows from a point wh. seems to serve as its root & has no coat.

A young Lady had a tumour on her lower Jaw wh. appeared to be Scrophulous. It was paid over to the bone, but in spite of sea bathing it grew again. The Tumour was again extirpated & the surface of the bone from whence it grew being cauterized it did not grow again

tumour was formed by a thin plate of bone containing a regular circumscribed substance easily scooped out.

Another young woman after the extraction of a tooth had cartilaginous excrescences growing from the upper Jaw. The fore part of the maxillary bone was destroyed & the Antrum exposed, but after removing the Excrescences twice they recovered. A return is to be apprehended.

Encysted tumours are divisible into different kinds – 1st Hydatids – 2dly those that contain different kinds of matter & 3dly those that contain a curdy kind of Substance. The coat is either Cuticular or condensed cellular Substance. Some are natural, others adventitious or formed of parts entirely new. These do contain Serum & are found in different parts of the body – viz. Tunica Vaginalis, Testes,

171 Kidneys, Thyroid Gland & Plexus Choroides
the neck especially of women. Some hundred
of them, each larger than the top of a Man
thumb were discharged from the side of a young
Woman's neck. The thickness of the Coat in-
creases with time, but in the inside internal Cavi
more slowly as it is there done by the adhe
Surf. only.

Others (not in the inside of Cavities or not containing Serum) resem
ble a nest of full Boxes - There is a large ex
ternal one vascular in some degree, within
wh. are others finer & not vascular. It is diffi
cult to say which forms first - The external
has been seen large enough to contain a g
Animals coming from a warm to a cold
Climate are very subject to them both in the
Liver & Lungs. - Are they Animals? -

Hydatids on in the Uterus & Ovaria are
generally very thin coated & contain a gel

nous liquor. They increase often to an en-
ous size, filling the whole Abdomen, &
ming Encysted Dropsy. - The manner of attack
diff. from that in Ascites - A weight or
ellung is first perceived on one side wh. as
increases, rolls about, but at length is fixed
ally distending the Abdomen. The health
the Patient is never so much affected in this
nd of Dropsy as in Ascites. - When tapping
performd a large trocar ought to be em-
loyd, altho' from the fluids being galatinous,
from ds being containd in a number of dif-
ent cells, very little can be extracted by one
hening. - The operation is frequently rendered
afe by adhesions - The Hydatids ought to be cut
ut where it can be done - Electricity has
een of apparent use in some Cases. -

Hydatids of the Kidney are generally si-
uated between the external & internal Lamel-

-la of the proper Coat - They do no harm wh
is lucky, because they cannot be cured. -

Hydatids of the Liver are generally con
-taind in its substance, & are sometimes dis
-charged by the Bag adhering to the Peritone-
um & producing inflammation & Suppuration:
a woman was found to contain a great Num
-ber all incloed in a common Bag.

Hydatids of the Lungs produce pulmo-
nary symptoms but no specific Effects - They
have sometimes made their way into the Tra
-chea & have been coughd up, at other times
they have formd the spurious Empyema, & then
they should be discharged as soon as possible. -

Cattle are very subject to Hydatids
about the Plexus Choroides, & the Farmers
cut them out - They give no particular
symptoms - Is not this a mistake? -

Those of the Thyroid Gland some

mes increase to such a size that respiration
deglutition are both impeded. —

Hydatids of the Cellular Membrane are
est frequently found about the Neck & Lips of
men, tho' they may be found wherever there is
uch Cellular Membrane - They do not commonly
ontain water, but Jelly, Hair &c.

If they be superficial they may be
end & very freely too on account of their in
olent nature - When the Coat is thick they sh.
e dissected out as they are prone to cancer. -

Encysted Tumours in a part are apt
deceive us - The Surgeon is satisfied with
ssecting out one - but if another shall soon rise to the
ame part he must suspect a deep-seated cause,
Diseased bone is a frequent one - How? - how?

In cuticular tumours - the surrounding
Cellular Membrane takes on the disposition of
ulis & this furnishes hair growing on the in
er surface - Bags so lined resemble those of

175 The Animals that contain Musk or Castor near the Anus - No part of the body is entir-ly free from these, but the Ovaria are most subject to them - Besides hair they contain a quantity of oily or curdly matter. - In the Over-rium of a Sheep a ball of wool was once found, formed probably in the manner mentioned. The cilia lining the Tumour had a tendency to produce this instead of hair & when the fleece was cast (when is that?) this was also cast forming a Ball. - If cuticular hydatids be cut into their skin will some-times join the external - but they may be ejected out frequently. —

Fungus knows out a great quantity of luxuriant flesh but is very different from Cancer w.h. w.h. is sometimes confounded. - It appears on any part of the body, but does

t appear to be a poison as the Lymphatics are not affected by it. - It begins by a tumour solid or Encysted, which breaking shows out a large dark-coloured soft fungus that bleeds profusely. No escharotics, not even Arsenic can stop its progress. It's basis is commonly the Cicatrix of old sores, & as it often kills one knows not how, we ought to amputate the part, soon, & far above the Fungus. -

A Servant of the Duke of Argyle had a tumour in his testicle which began wth little pain but increased to an enormous degree - As the Cord was sound, Scrophula was suspected - The Skin was affected from Sympathy - the Testicle being taken out, the wound healed very well, but it opend again & the edges of the skin or cicatrix (for the Cord was still sound) threw out a fungus which increased in spite of every Escharotic (arsenic not excepted) & killed the Patient.

Scrophula tho' it produces local sympath
ought not to be rank'd among the poisons. It
does not affect parts by absorption, nor ca
it be communicated by inoculation like the p
Turkeys & Monkeys are subject to it & I. H. o
saw it in a young Boar.

The delicate & irritable, with fair
Complexions & light-coloured hair are more
subject to Scrophula than those of dark com
plexions, only one of whom I. H. ever saw wd.
Scrophula. Is it because fair people have
less red blood & more languid circulation?

The Lymphatic Glands especially those
most exposd as in the neck & Lungs are pe
culiarly exposd to Scrophula. Joints with
the soft end of bones & Ligaments are also
in danger, especially those of the hand &
foot. - These joints are most exposd to cold

eir Circulation is languid & there is a great
umber of Cartilages & Ligaments, wh. favour
e disorder. The Joints of the Knee, Hip &
ertebra are also affected by it. The Skin
w the least tendency to it, tho' tho some
times affected in a 2dary manner. – From
to 15 years of age people are most subject
r it – 'Tis rare from 15 to 40, & rarer afterwards
'Tis most freq.t from at 40 to 60 so that
old alone does not produce the disorder – in
nstancy must be joined. Is it hereditary?
ide. my Journal for Cruickshanks Lecture,
Whatever excites morbid action in a part
r in the Constitution may produce Scrophula
n those predisposed – Hence it follows fevers,
mall pox – Cold, sprains &c. –
Little inflammation attends the true Scro
phula, hence L. Hr. supposes the matter of it
to be Sedative. – It's progress is very slow. –

 When Lymphatic Glands swell much in one night, they partake more of common inflammation & suppurate sooner - When Scrophula affects the bones, all the earthy part is sometimes absorbed. -

As the inf.n is imperfect, the suppuration is so too - Indeed in true Scrophula when resolution fails - the parts seem to lose their life, but do not mortify - a quantity of curdy matter is formed. -

The matter is often of the common kind, especially if it come directly from part not Scrophulous as in the Psoas Abscess, but coagulable Lymph is frequently mixed with it.

Ulceration is slow & when it reaches the Skin appears stationary for months, the matter being reabsorbed. - It does not form at a point like common abscess, but the whole

surface appears shining, purplish &c.
Granulation is extremely slow. It looks like a transparent glossy substance, & it has power of contracting. - The Cicatrix either does not form, or is not good. -

Scrophula begins in 3 very diffd ways. 1st By circumscribed tumour - 2dly by Tumefaction - 3dly Suppuration without the last. The 1st are commonly in the Lymphatic Glands, tho' they are sometimes found in the Brain, Breast Testicle Uterus &c. - In the Breast they are mistaken for Schirrus but do not produce pain nor swelling in the Arm pit. In the Testicle they are mistaken for Cancer.

In scrophulous abscesses of the Fingers, the tumour hardly subsides even in consequence of Suppuration - Exfoliation from a scrophulous bone is extremely difficult. -

181 - Scrophula in the knee is more painful & more readily suppurates than in other parts because the Accident producing it, generally excites some degree of inflammation. -

In the Lungs it forms tubercles wh. inflame, suppurate & induce Hectic.

Lumbar Abscess often begins with a pain in the knee & along the inside of the Thigh - The progress of the disease is insensible, & often deceives the unwary - Sprains bring it on. -

When there is an abscess of the Joint of the Thigh, there is first weakness, then Lameness, confined motion & gradual decay of the Limb - The motion chiefly distinguishes this from Lumbar Abscess. -

A Scrophulous breast was cut out wh. weighed 16 Pounds - It increased gradually

thout much pain & the Patient recovered. –
w can we distinguish Scrophulous in the
stucle & Mamma from Cancer? – In this the
d is always affected by absorption, in
cat, never – In this the breast is much pain
om the beginning. the Lymphatics running
o the arm-pit harden & the Glands there
well – in that no such things happen.
Cure – Climate is often too strong for mede
ne. Bark will cure an Ague in Berk.
ut not in Lincoln. shire – A warm cli
mate near the Sea is to be preferd, & sea
athing ought to be tried not for weeks
nly but for months or years. If the cold
ath disagree, the water should be heated
o 80 or 90 & the patient should sit in it
for 10 minutes together – This will give strength
n place of weakness – Cicuta, burnt spunge
al Soda, & warm Cloathing are worth try
Sarsaparilla. ing. –

 Bleeding palliates not by diminishing in-
flammation but by diminishing the quantity
of blood that is to pass thro' the Lungs, great
part of which is often destroyed. - & always
does harm. The royal touch & Secain wo
for years are of equal Efficacy. -

Local applications are seldom effica-
cious - Hemlock Juice - Sea-water with Li
seed Flower - are best, when the sores are o
pen - they should be bathd with Sea-water

When suppuration has taken place, the o
pening should in general be left to itself as
the irritation of art often produces erysipelas,
althó' a fever has been known to cure Scro-
phula. Death sometimes follows the opening
of Lumbar abscesses or white swellings. -

Rickets seem to arise in a particular
modification of weakness, & in a state

bone which prevents the Deposition of
lcareous Earth. This calcareous Earth seems
check the growth of bones - hence the soft ones
row most - Rickets may therefore be said
be a Deficiency of earth & an increase of ani
al Substance. - In rickely Children little Earth
deposited - In adults, little is allowed to
emain - In consequence, the bones of both
ield to pressure & to the action of Mus-
cles. Scrophula is connected with Rickets.
At Lime house a case was found in
hich the Calcareous Earth was compleat-
bsorbd & the remaining substance of the
one did not look like bone, but Ligament.
Pressure prevents growth & also bends the
one - This is best seen in the Vertebra, Fe
mora, & tibia - The upper Extremities how-
ever of Rickely Patients are sometimes in-
urvated from muscular Action only. -

Various evils arise from the distortion of bones
as Dyspnoea - Difficult Labour &c. Sometimes
the Absorbents remove the external part of bones
of the head, the Arteries add a surface matter
in producing pressure on the Brain, Idiotism
& Death. -

All that can be done in the cure either of
Infants or Adults is to strengthen them by Bra
shell sea-bathing - This has great Efficacy.

Exostosis is most common in the young. If
near a Joint it may impede the action of
Muscles - It ought to be removed where that
can be done - There is little hazard of ex-
foliation - therefore the wound may be healed
by the first intention - Where the bones do
exfoliate they will make way for them
selves - with less detriment than would
take place from keeping the wound open. -

stula in a part is not a disease, but the consequence of one - It is either - the formation of an artificial canal from the obliteration of a natural one, or 2dly a passage formed for matter in a diseased part as Fistula in Ano, Perinæo, bone &c. -

When a passage is so obstructed that a fluid cannot pass, inf.n & supp.n produce a new one. Thus the urine passes by a fistula in perinæo, &c. -

Scrophula, L. & S. pox obliterate the Lachrymal Duct - or it coheres - The obstructed tears swell the Sac & imitate it by their quantity & salts - Inflammation & suppuration follow - so that the tears run down the gall's cheek - In strictures of the Urethra we can apply Bougies, but here we must perforate.

The Ducts of Cowper's Glands have been sometimes obstructed in Women, whence the slimy matter has been retained & produced

a swelling on one side of the Labia pudendi wh. has been mistaken for hernia. Before they increase much they should be opend & the wound healed by the first intention - A 2d opening is afterwards to be made near the obstructed Gland & kept open. A crucial incision is therefore the best for letting out the mucus that should have passd by the Duct - Lancelet is as good as the Lancet.

The Duct of the Parotid Gland is superficial so may be obstructed - whence the Salivа may run down the Cheek & leave the mouth dry. We must pass a Ligature from without into the Mouth & leave the loose end of it in the Duct till it shall have lost all Disposition to heal - The external wound must be healed as soon as possible. -

The fistula in a diseasd part in consequence of Suppuration arises from a disproportion between the part & the Skin as to the healing

eposition - This may arise either 1st from an
branceous body, or 2dly from an abscess's not
ving a kindly disposition to heal. In this
se the part may either be indolent or an
dolent humour may be produced in a part
ot naturally so - Bones Ligaments &c are ex-
mples of the first. --

. Fistula in perinao - Matter deeply seated
ais the power of stimulating the external parts
o as to prevent their healing - It matters not whe
ther the matter be situated in the prostate gland,
he bulb or the membranous part of the urethra -
A man cut for the Stone has no deep seated
matter to prevent the wound from healing - One
descend part may be the Cause of several open
ngs on the skin - because one orifice nearly heals
s another breaks out - - A man who had been
ut 2ce for Fistula in Ano, had one about 2 inches
up the rectum - Then it penetrated the rectum &
ran up 1. inch by it's side - Dressings were here
necessary.

189 Care must be taken to prevent rigidity of Joints & muscles - in case a part to be healed has any connexion with these - Injuries done to the Shoulder Joint are most tedious in curing on account of the weight of the Arm, - & the cure is always performed with the Arm hanging down - if it could be elevated during the cure the weight of the arm would assist the muscles in pulling it down -

A Carbuncle appears more generally on the back than the fore part of the Body & not very remote from the Source of Circulation so that weakness alone will not explain its nature.

It begins with considerable inflammation of the Eresypelatous kind - The part swells & has a doughy feel - Then a pimple forms, resembling a small pock w.th matter - The inflammation extends & produces death in the Cellular Membrane - Tis not certain however that this is the primary seat of the Disease.

e skin appears to be the primary seat, & the
flammation not being bounded by adhesion,
e matter passes out into the Cellular Mem-
rane, while the skin above is covered with
impules which ulcerate as if for the escape of
he mortified Cellular Membrane. The Sloughs
oming away large Chasms are left wh are loosely
overd by skin & the Lips of the Pimples are also
ose & flaccid - Why does not the skin carry on
he disease if it indeed began there? Does the
ontrary to all other examples, penetrate deeper &
deeper? If so as soon as a base begins to be found
small
an opening ought to be made - Too much skin
ught not to be removed, because a part of it
eing left, often unites with the interior parts
fter the Cellular Membrane has sloughd away.-
External Applications can be of no use till the
loughs come away, as they cannot before that
ome in contact wh the diseased Parts -

191 Boils seem very similar to Carbuncles, but having more of the adhesive inflammation do not spread. When there are many Carbuncles or large ones there is a fault in the Constitution. They occur in the old, Boils in the Young. —

Mr M. at 70 who had lived very well was seized w.th universal Dropsy which gave way to Dover's Powder & weak Punch. Soon after he was attacked with numerous Carbuncles. for w.ch opium, Calomel & Bark were taken in vain. His health at 1st good, decreased. The 1st Carbuncle appeared on his Shoulder the 2d. 8 inches lower & these afterwards joined. — A 3d appeared on the side. a 4th on the small of the Back. The were opened sooner than the others & did not spread so far. He took Cicuta. drank Decoctions & ate puddings of Sarsaparilla in vain. Decoction of Elm with Sal Soda appeared to be of great Service. When the Carbuncles

gan to heal, they discharg'd a thin kind of
num - No bounds being set to the inflam=
ation the Cellular Membrane mortifies, becau
matter be at any time effus'd into it, slough
g is the Consequence - This is diff^t from that
ortification which results from increas'd ac
ion. _ Bleeding in general is hurtful. -
Tetanus seizes other Animals as well as
en - A stag became rigid all over, from a com
ound Fracture - A local injury incapable
producing much inflammation seems it's most
equent Cause - In throwing a stone at a Deer
H. strain'd his fore-arm so as to produce extra=
asation - He lost the power of moving it for seve
ral hours & was in great pain of a dull heavy
kind producing Nausea - & cramp during walk=
ng - The soundness of constitution prevented Tetanus.
A man was convuls'd from a consider=
ble wound w^h heal'd before any Symptoms of
Lock Jaw appeared, for it continued
2 months.

A man received a wound from a nail in the Ball of his great Toe - The Inf.n was slight, but Lock Jaw came on & ended fatally After Death it was found that a piece of hat Leather had been driven into his toe - Adhesions were formd all round - & perhaps if inflammation & suppuration had been more abundant, the Disease might not have come on. - Large wounds do not excite it till the inflammation has subsided, nor small ones except when they produce but little. - When the Disease extends to the Muscles of the Jaw only, there may be hopes; but generally within the fortnight, it affects other & kills - If the Patient survive the 3d week he may hope -

The Disease commonly begins with a stiffness in the Jaws as if the Person had got cold - with now & then a soreness of the Tongue & Mouth. - The Extensor Muscles of the head

e next affected - then those of the Neck & Ch
ine forming as it were an arch - The Mus-
les of the upper Eye-Lid are at times affected
o that the Patient seems labouring to keep him
elf awake - The abdominal Muscles become ri
id: there is much uneasiness about the Sternum;
espiration becomes difficult - pain & spasm in
rease till closes the Scene. - Why is Death so
equent? The Patient is free from fever; his
enses are perfect; his excretions & secretions are
egular; & there is no inflammation. Perhaps the
asm may extend to the muscles of ~~Infl~~ Respira-
ion themselves, as in Gout &c. -

Antispasmodic remedies don't succeed - Chi-
m is sometimes useful - often, not. - Perhaps it
hould be given largely from the Beginning &
ot gradually increased - J. H. recommends Cold
pplications - says if he had the Disease, he wd
into an Ice-house, or sojourn to the North
f Scotland thinly Clad. Does not extreme cold pro-
duce it? -

Captain Muckle had his Radius fractured from a shot - There was a good suppuration & he did well for a fortnight - but at that time he was seized with Spasms of the Supinator & Biceps, with stiffness of the Jaws. The 1st Inflammation having subsided a fresh one took place round the wound. - There were many small pieces of bone that were removed with Difficulty - The wound was dressed with Tinct Ro & poultice, while 2 gr. of opium were given internally - The next morning he was worse - The arm swelled, the wound appeared blacker while every warm application increased the spasms. - ℥i of Cortex was now given along wt the opium - The 4th Day he was better - the wound sloughed & his Pulse became soft - He lost ℥vi of blood to-day - Tr. Ferr. was injected into the wound - The 6th day he was still

etter, but his Pulse being full he was ordered to lose Blood - Immediately he fell into fit, & then into another wh. in ½ an hour proved fatal.

A Soldier at 35 in good health was shot into the hell. - After a while he was seized wh. Lock Jaw - He took gr. 1 of opium every hour & then it was increased - Musk was tried for a fortnight - wh. an opiate at night - At last he would take nothing but the opiate at night, & Port wine thro' the Day - He recovered insensibly, the wound having healed first. —

A B labouring under this Disorder took gr. of opium - then 2, then 4 every hour - & then 8 & at last 6, but relief - Every thing was omitted during 2 days, but he was rather more restless. ℥1 of musk was tried every 24 hours, along with ~~Musk~~ Opium & Camphor - The Cold Bath was very uncomfortable - Blisters & Sinapisms were used - 8 days without Effect, but at last the wound healed & the Patient recovered insensibly.

A young man delicate irritable & superst-
-itious suffered amputation for white swelling 13
days after the operation, while the wound con-
-tinued to look well, spasms came on. For 3
days he took Ether in 10 Drops frequently re-
peated & sweating plentifully without relief-
Blisters were applied to the Temples, & 4 gr. of
opium were given every hour, then 3 grains
every quarter of an hour to produce insensibi-
lity - but without effect - It was then omitted,
& after a day & night he died, but nothing was
discovered on Dissection. —

A Sailor had his wrist wounded by the
bursting of a Gun-Barrel - The wound bled freely
& in a fortnight lock-Jaw with a bent back
came on - The day after he was put into the
Cold Bath, & found it comfortable, but the
pain of removing him prevented its repetition.

grains of opium were given at night, & next day, wine, bark & steel were tried in order to give strength - 4 gr. of opium were given next night & next again 7, but in vain - a weight was placed on his breast to prevent him from starting up wh. he otherwise did from the violence of the Spasm. He took occasionally 1 gr. of opium & 2 of Sach Salumi - repeated 10 times a day - Costiveness was produced & he would take no more. - He died - The relaxation that follows the application of Lead in the Colica Pictonum led I.H. to use it here.

To a woman in St George's Hosp. with Lock Jaw after fractured skull gr. fs of Sach Sat. & of opium were given every 6 hours - then every 3 hours, & at length double the quantity - at the same intervals with 1 gr. of opium every hour got well. -

Mr Shakespear with a Chisel wounded the anterior tibial Artery - Bark daily & an opiate at night were ordered. -

199 about the 12th day, tho' the wound looked well, symptoms of Lock Jaw appeard - Bark - opium Musk, Asa fœtida were usd - A stupor coming on opium was omitted & Ung. Mercur. usd. - But he died - universally stiffend. -

Thos. Willms was seizd with head-ach, pain in the side, Cough &c - for wh he was bled & took Camphor & Nitre - After some relief, stupor came on & was followd by Lock Jaw - for wh he took 6 gr. of opium for 5 days without relief. - Bark & port wine were then prescribd & he recovd

Poisons

They are still ill defind. - All things that are contrary to health may in one Sense be considerd as poisons - but many things injuri-ous to health are useful in Disease - What is useful to one Constitution is hurtful to another - Thus Honey poisons - Strawberries pro

duce a change on the skin & Cyder gives E-
rysipelas - - Again tho' a small quantity be
not only safe, but salutary, more becomes hetero-
geneous - The 20th part of a grain of Arsenic is
harmless - In time we may perhaps lose all idea
of poisons except what depends on quantity
alone - When one swallows a bit of glass &
dies he is not said to be poisoned, but if the
glass were powdered he is said to be so, be-
cause the manner in wh. this operates is not
so cond.t. Lowage improperly given, as also a
draught of cold water may prove poisonous. -
Shell-fish - Muscles &c. are also to some people
poisonous - Nothing that acts chemically or me-
chanically Dr. thinks should be called a poison.
A poison, he says, is that wh. produces a pe-
culiar mode of irritation, & in the smallest
possible quantity affects the living principle
peculiarly. —

201. Most of the morbid poison, as the ca-
nine, variolous &c. answer this Description.
Poisons, commonly so called, are produced from the Vegetable, Mi-
-neral & Animal kingdoms. See Abbé Fontana
Exp.ts with poisoned Arrows. —

The Bug & Gnat take their food from the
very orifice by which they convey their poison
Lues Venerea seems peculiar to the human
race, for experiments to inoculate other crea-
tures have failed, but the hydrophobic can
be conveyed to all. John soaked Lint in the matter
of Gonorrhoea & Chancre, & let it remain in the Vagina
of an M.s & Cancer is distinguished by tumefaction
hardness, suppuration in the Center or ulceration
Pulch, in vain.
of the External Surface - It chiefly affects the con
-glomerate Glands and the Breast, Lips, nose, Ute-
rus, Pancreas, Pylorus & Testicle. It is merely
a local Disease - It begins sometimes with a
schirrous Lump, sometimes in the breast too with a Discharge of

ood. In the Lip, it begins with a thicken-
g. When the Axillary Glands become impervi-
us, there is a degree of Œdema, but it was
ce seen, without any affection of these. –
In a cancerous Scrotum, the glands of the
oin were affected not from the Cord, for the
lands of it do not run that way. –
By the matter of Gonorrhœa J. Hunter pro-
duced Chancre in himself. – The difference of sym
toms does not arise from any specific difference
the matter, but from a difference in the parts
wh. it is applied – A Gentleman who had
Chancres that were healing fast, run his Spur
into his Leg, & produced very ill-conditioned
ores – John was almost tempted to apply Sec.
atter to the Legs. –
From a natural decay, some parts be-
ome unsusceptible of the same action, tho' the
atter which originally excited it continue to
e applied. This is most remarkable in
secreting surfaces. Gonorrhœa cures itself – Chancre
never. –

203 Will gonorrhoea be increased by an addition of the matter that produced it? No - At least matter from gonorrhoea or Chancre put into a Bubo makes no alteration on it. A stimulus constantly applied loses its effect, but an interval restores sensibility to the Part - Thus if a man be in the habit of moving a clap woman every night, after he shall have been cured he will not be infected except he intermits his operation for some time, suppose a week - 'Tis very difficult to know when the Taint is removed. - Women sometimes infect men without being sensible of it. A Magdalen after being 2 years in the Hospital infected a man - Habit produced insensibility but did not remove the Disease - Are you sure Johny that she was chaste during Confinement, & that this Gentleman was her 1st. Shoxel after dismission. - -

the matter of both be the same, why don't
anche & Gonorrhœa always coexist? Some-
nes they do, & where they do not, perhaps the
e irritation may prevent the other. The poi-
n is sometimes absorbed by the Glans penis
ithout the production of any primary local
ffect - but in general inflammation & ulcer
ake place. - When the disease affects the Gen
itution we should expect a similarity be-
ween the topical effects that follow & those
ho precede the Constitutional attack: this
however is not the case. - The attack on the
outh & nose is preceded by little inflammation
& the matter is not poisonous - Sweat & milk
were formerly believed to be impregnated with
the poison, but this is a mistake, there is
no impregnation without Venereal Inflammation
Venl matter taken into the Stomach is capable
of being digested without doing harm - A Boy
drank the milk & water with which Chancres

had been washd, & no harm was done. a
Lady by mistake swallowd a Bason of milk & wate
with wh. her Lover had washd his Chancres
instead of Tea, & althó' 8 hours intervene be
fore she took Ipecacuan, no bad consequence
followd. –

Can a Fœtus receive the pox from the mo
ther? – Only by some of the matter being con-
veyd during birth – which may be done by a
Scratch or by the Mouth. – Can a Child give
it to the Nurse? never except when the
disease was received originally by the mouth,
& ulcers were formd there; these are of the na
-ture of Chancres. Neither the Salivas nor the
Blood can convey this Disease. – Many lo-
call effects are however produced, but how far
the matter formd there is venereal, we cannot
yet determine – Mercury cures them as
well as Chancres. – But ulcers in the

roat do not affect the Glands of the neck
es in the arm produce no buboes in the
illa, but if matter from the original Chan
re be applied to these, a Bubo follows. –
he matter of a Gonorrhea or Chancre is capa
le of affecting locally a man already pox'd. –
ut such an effect can not be produced by
atter from constitutional Sores.

Many diseases not venereal have been
alled so which has introduced much perplexi
y into the subject. A Child died of excoriation
s of the Skin & thickening, & inflammation
f the Intestines – This was reckon'd pox, but
ithout proof – A Nurse's Breast inflam'd &
lcerated 3 weeks after the Death of a Child –
The disease was straughtway call'd venereal
& ascribd to the foul mouth of the Defunct. But Mercury pro-
duced no Change to the better in the woman,
the good Diet & air cured her. –

When Blotches appear & disappear, the

207 probability is that they are not venereal, a
also if they during the use of mercury while th
formerly present have vanish'd. – Parts most ex
posd to the Cold seem most liable to this Disorder
Hence the skin is principally liable – then the
Bones wh. lye nearest as the Tibia – The Dis-
-ease is most severe in cold Countries. – The
parts most easily affected however are not the
worst in the advanc'd stages of the Disease, as
they seem to loze their original Susceptibility. –
The part originally affected may be most rea
-dily cur'd & tho' a Constitutional disease may
remain this part will not break out so soon
as others. –

When the Sent. inflammation seizes the
Glans penis, it generally occupies the root of it
where the Skin is thinnest, for, a thin matter
is discharg'd from that part & there is an ap
-pearance of Excoriation. – The inflammation
to the urethra commonly extending about an

ch - Lou^s. By translation says John, & proves it by Colonel B-. That Gentleman telling n a Necessary in Germany got upon his enis a venereal Plaster w^h. some one had t there & had the Disease.

The Testicle sometimes swells, not from a ansference of Ven^l. matter as has been said, ut from sympathetic irritation - Bougie, Gout, &c. ddice similar effects - The swelling is more fre quent after the inflammation has begun to de cline. - John once knew a Testicle suppurate & heal without the use of Mercury. - There is often in Gonorrhea a sympathetic swelling of the groin which disappears without the use of ☿. But if a hard Cord run along the Back of the Penis to this part, absorption of Ven^l. matter may be apprehended.

The time between contion & the appearance of morbid symptoms is very various - Sometimes only 12 hours intervene - sometimes 6 weeks - "Tis diffi cult too in some cases to say, what Gonorrhea

209 is venereal & what is not. Sometimes it
follows the cutting of a Tooth - sometimes gout
rheumatism & often - quod equidem testor - ha
rogering. -

Altho the Disease in question be orgi
nally local, yet the Constitution is very ge
nerally affected with Rigors, slow fever & rest
lessness - before any local Symptom - In such
Cases infection is not communicable - For th
matter is requi'rd.

Time generally cures Gonorrhea wh. is ver
fortunate as we know of no specific - Violent
purges of Colocynth sometimes have cur'd it i
24 hours. -

What is the sign of a Gonorrhoea's being cur
Not the bare cessation of Inflammation, for the
Disease has been communicated after that. A
Gentleman who got one in April - was sour
well excepting only a small hardness of the E
pidydimis & a slight Chordee, with a trifling
Discharge of Mucus, yet after 3 months he infected

his wife.

Besides Gleets which often remain after Gonorrhœa is gone, strange sensations are sometimes felt about the perinæum & Bladder-Irritating Injections cure some of these, Bougies others, Cauta others - Blisters to the perinæum are extremely efficacious - A Portuguese Gentleman was cured by these when he had symptoms of something like stone & tho' he got another Gonorrhœa in a Fortnight, his Complaints did not return. -

Are strictures the Consequence of Venereal inflammation? So says Pony. Because they often occur at the same time in the Œsophagus, Rectum, Ductus ad Nasum, Intestines &c. - They occur in those who have never had Gonorrhœa or at least not for 40 years. - They occur chiefly in the Membranous & Bulbous part of the Urethra, whereas the Gonorrhœa occurs mostly in the Lacuna magna. They never arise during the Inflammation

itself - They are attributed to Injections tho
they occur where these were never used - They
also imputed to Ulcers in the Urethra wh are
bremely rare - To make the best Bougies.
℞ Ol. Oliv. lib iii - Cera lib i. - Litharg lib j
Coq. lente per horas 6. - Daran's Composition
Take a large hand full of the Leaves of Hemp
Tobacco & St. John's Wort - cut small & boil
them in lib x of Nut oil, with lib i. of Sheep's D.
then add lib iii of Hog's Lard, & the same quan-
tity of Mutton Suet - stirring in gradually lib i
of Litharge finely powdered boil again & adding
lib ii of Bee's Wax boil the whole to a proper
Consistence. - John Hunter's is 3 parts
of Diachylon, 2 of wax, & 1 of Shell Lac. The
Diachylon & Lac are first incorporated. -
Sometimes there is an erection without
emission, more frequently the reverse - As a

nilleman who could neither ride nor sug-
r the least friction of his penis without E-
ysion, was cured by opium applied round
e glans & internally taken - Hemlock too
ay be tried if opium shall fail.

A Chancre may be produced by applying
nereal matter to a wound to a Sore or to
e skin - The last manner is the most freq.
it takes place where the Skin is thinnest
about the frenum, sometimes in 24 hours -
metimes not till 7 weeks -

Why are Buboes produced in the Groin only?
it because the vent. matter is diluted in its
ogress, or is it, because the deep seated Glands
e less irritable? When Bubo arises from Go-
orrhoea or from a Chancre on the frenum it
ay occupy either side or both. but generally
t is on the same side with the Chancre -
rom the irregular Situation of the Glands, it

sometimes occupies those above Poupart's Lig-
ament. – In women Buboes differ somewhat.
If the Chancre is on the Labia, Nymphæ & the
matter will be carried along the round Ligament
& the seat of the Bubo will be there just be-
fore it enters the Abdominal ring – This part
is not glandular, which shows that Buboes
sooner chuse an external Lymphatic than an
internal Gland. – When the Chancre is situated
farther back, the Bubo will be situated between
the Labrum & Groin, or in the Groin. –

'Tis difficult to distinguish venereal from
Scrophulous Buboes – When mercury is to be ap-
plied, it ought to be applied as near the
Bubo as possible that it may enter the
System along with the poison & counteract
it as early as we can. It will cure the
specific inflammation, but added to this

ere are often a common, an erysepalatous, or scrophu-
rus present. In the 1st. bleeding & purging, in
e 2d. Bark, in the 3d. Lecula & Sea-water
oultices are proper. Vomits have often done good.
Chancres on the Lips & fingers have produced
Bubos in the neck & axilla - Treatment same.

Mercurial friction is the most powerful
preventative of suppuration, & John has only had
3 suppurate during 16 years. - Mirandum.

When Bubos do suppurate they must be opend
at the most depending part & it may be prudent
to administer ☿ during their Suppuration. Where
that does not answer, Hemlock, Sarsaparilla, Sea
Water &c. may be employd. - Gold Beater's water
is used with advantage at the Lock Hospital
& Sir Wm Fordyce not without reason recommends
the Juice of Lemons & Oranges. -

How does ☿ operate? Is it on the Constitution
alone or on the poison? If on the last it can operate
only by one of two ways; either by decomposing.

 the poison, or by mixing with it & carrying it out of the Body. - If the 1st quantity alone would be sufficient; if the last, the greater the Evacuation, the more speedy would be the cure.

Sulphur enters the blood, as appears from y smell of the Sweats, & either decompounds the ☿ or blunts its action, or excites an action contrary to its. - Purging is generally employ'd to lessen the action of ☿, but John never saw it answer - Bark may be given when the ☿ runs off by sweat or urine - A Gargle of Laudanum is very useful when the long use of ☿ has made the Salivary Ducts very irritable. -

Guiacum has some little efficacy in curing the Vent. Disorder, so that it may be employ'd to assist ☿. John tried it & Sarsaparilla which last he found perfectly inert. A Man

ad Venereal Sores on his Scrotum, Anus
& Armpits. A Poultice was applied to the one
rmpit composd of Guaiacum, to the other of Sar-
eparilla. The former heald the wound - while that
nder the Sarsa got worse. ℥ss of Gum Guiac
was given 3 times a day wh purging was pacd
with an opiate, & in 3 or 4 weeks the wounds
were heald, but having again broken out af-
ter a fortnight & Guaiacum having faild of effect,
℞ was tried successfully. e

As ℞ must be dissolvd in our Fluids in
order to act, that preparation wh is the most so-
luble, ought to be prefeed. Calcination increases
solubility so much that purging is very readily
produced. — Expts on John. He says —
I put crude ℞ into my mouth, but it was some
time before its taste was perceptible, whereas Calomn.
& ℞ calcind gave the same taste very soon. — I
rubd ℞ into my thigh till my mouth was sore

& after it was well & made it sore successively with Calomel, with Calcined ☿ & Corrosive Sublimate & the taste was the same in all. –

The most probable opinion concerning the action of ☿ is that it excites an irritation contrary to that of the Poison – It certainly does produce a very considerable irritation – A Gentleman formerly little affected by Electrical Spark during the use of ☿ became very susceptible of the influence, insomuch, that they removed a Complaint for wh. they had formerly been used in vain. On this hint the Surgeon premised a gentle ☿al course to Electricity oftner than once. –

The use of ☿ produces a disposition wh. is neither natural, venereal, nor mercurial, but compounded of them all – Abscesses in this situation will not heal under the use of ☿ – The weakness, sweats, Languor & general tendency to Hectic indicate Strengtheners, & these are

requently effectual. Sarsaparilla too is of use
n this state tho' tis not, while the General
isposition continues. It is generally given in
ecoction - why may it not be given in Pudding
r in pills made of the Extract? - Perhaps when
ven along with ☿ it may tend to prevent
is new disposition from being formd & so
er may even then be useful. — Sea Bath
ng & Cicuta have been useful after ☿ had
eft sores. - The preventatives are Caustic Al
kali well Diluted - Lime water & Corrosive
ublimate Dissolved in water - Goulard has
he power of coagulating the Juices, but this
may be done without destroying them. 2

End of John Hunter.

Baron Voll says "A Basha had taken a great
iking to a European Merchant who was con
ind to his bed by the Gout - The Basha sent
2 Servants to give him 50 strokes on the Soles of

his feet, which was done with much a
verity & cured him. –

To show the utility of comparative An
tomy Haller gives the following instance –
Bile is found in the Ducts as well as i
the vesicula fellea – Is it produced in this las
or in the Liver? Man can never determin
this, but other Animals do, for some of these
have Livers with Vesicula, but none of them
have Vesicula without Livers. The gall is
perfectly good without Vesicula, which besid
are always found connected with the Liver –
The conclusion is obvious. –

Haller begins his Physiology with the sim
ple fibre – The Elements of it are fluids & so
lids which cohere with such force that Exte
heat is required to separate them – When se
parated by this, or by long exposure a sua
ble earth remains not soluble in water,

h effervesces with acids & by extreme heat
vitrified - A whole Embler resembling a Man
as seen by Augustus at Alexandria, the
lightest touch made it crumble in pieces
this was all that remaind of Alexander
whose arms disturbd & whose name has
ll'd the world. -

Lemery denies but Menchinus has
proved that the animal solids contain a pro-
portion of Iron or at least of that earth
h when treated wth inflammable fomites
yields iron. The bones contain but little of it.
two pounds of them yielded only the 5th part of
a grain. -

The cohesion of animal parts is produced by
gluten which may be dissipated by fire. When
the parts become brittle, but being steepd in
water (or more certainly) being boil'd in oil,
recover their cohesive powers. -

Papin & Rubin confined animal substances so that they were for a long time penetrated by the steams - Cartilage was almost entirely reduced to Gluten, & bones yielded such a kind that it inspissated when from a harts horn at 6th 6 times its quantity of water - when from Ivory, 5 D. - Gluten composes 2.3ds of an infant's bone - one half - of that of an Adult, less of that of an old man. - A young bone stewed with a gentle heat dissolves even the bones into a perfect Mucilage. - Glue wh. Joiners use is procured from the skin, Ligaments & Cartilages. When putrid it exhales by its volatility. When distilled from bones it yields by being frozen, water, volatile salt, fixed or sea salt. It is without taste & smell except the fire has been applied. - The greatest part is water but there is a considerable portion of oil to wh. its glutinous power is owing. - Clay also owes its glutinous quality to oil. - Males are

as shown it to contain air - The firmest
uls of the body contain it - a bone con-
tains 200 times its own bulk of this air.
he horn of a hart yielded 232 times its
own bulk of it, & lost a seventh part of its
own weight + The hardest bodies never
rumble without emitting bubbles of air -
his is seen even in flint & the human cal-
culus - Is air the vinculum? Does it not
only lay aside its repelling powers, but
become even a principle of attraction? -
The invisible fibre is composed of earthy particles & gluten only - a continuation of it forms
long fibre as may be seen in the ossification
on of an Infant's Sinciput, frontal & occipi-
tal bones - the beards of whales - the Tendons
ligaments - dura mater - Cartilages & Cellu-
lar Membrane. - - The common properties
of the fibres are: Elasticity - want of irritabi-
lity - (excepting the muscular) insensibility

while destitute of nerves - greater specific gravity (when not putrid) than water - total want of blood - solidity - whiteness. -

Tela Cellulosa is composd partly of fibre partly of Lamina. - It was unknown till late It covers the whole surface of the body below the skin, fills up the interstices of the muscles; is placd on the outside of those Membranes which form the various sacs that contain the Intestines, the heart &c. Even the pia mater is formd from it. - It not only forms a bag around a muscle, but around each of its fasciculi & fibres. - It surrounds almost all the Arteries, Veins & Nerves. 'Tis most remarkable around the genital Vessels, the trunks of the Hepatics where tis called Capsula; the pulmonary & the Carotid. - 'Tis interposd between the different coats of Vessels as in the Stomach - Intestines &c. -

It fills various cavities as - the Bones to hold the marrow - the penis & clitoris to receive the blood. -

Every part of it communicates with every other in such a way as to allow a fluid or solid to pass from one part to another. - Thus Butchers in order to bring the skin freely off, blow air below it; horse Jockeys do the same to make their horses seem plump - 'Tis done also to Calves & Camels. - Ruysch distended the faces of Features to remove their shriveld look - an impure man blew up his Sons like a Bottle - imitated hydrocephalus - Robbers distended a wretch to such a pitch that he cut his throat to let out the air - Pliny says that Jews themselves may be puff'd up. -

By a wound of the Lungs or the Trachea, air may be introduced into the Cellular Membrane while the Collapse will prevent it from escaping again. -

Broken ribs, Castration & wounds of differe[illegible] parts have produced Emphysemata reaching e[illegible] to the Penis & the Eye-Lids. - Suppressed perspi-ration & interrupted fever are said to have sometimes produced similar Effects. -

Water also flows similarly & pus. From an abscess in the breast, pus has been discharged at the buttocks - From one in the Kidney it has extended to the whole space between each thigh - From one in the Paro-tid it has reached the Elbow - In a phthis[illegible] & gibbous patient a sack was found behind th[illegible] Pleura, & similar pus was found in the pancreas mesentery, Liver, Axilla, neck, groin, below the Dura mater, & in the Joints so that the cubitus fell off. - 'Tis said the Arabians from a single wound, by shaking the bird, extract all the fat from the Ostrich. - This is a little mar-vellous what follows is much more so. -

The prickles of the Canadian porcupine, hav-
ing entered the body are insinuated among
the Muscles till they reach some vital viscus & kill - A spike of grass being swal-
lowed has come out at the side - A needle
swallowed was cut out of a vein - & an
ear of barley - from the Loins - A needle
thrust into the arm came out of the Mam-
ma - & another piercing near the armillary
Ligament of the hand was drawn out to
years afterwards at the top of the Arm. -
Balls entering by the breast have often
come out by the Loins

What is the use of the Cellular Membrane? - 24.
contains fat & vapour; it gives firmness to the
different vessels, for varices are produced by its
removal; it confines them to proper limits, for
the nerves are elongated when it is cut: &
unites the different coats of vessels & the dif-
ferent organs of the same part to each other.

 It not only gives firmness, but mobility also to the different parts. When it is destroyed the muscles grow to the skin & the glands become schirrous. – The Vesicula seminalis contorted – the carotid below the Cranium – the Splenic Artery – the Valvula Coli &c. all owe their contortions to it. – It is not nervous, aponeurosous or sensible. – –

The Membranes are composed of it, as appears from many considerations. – 1st. Air can be blown into many of them, as those which covers whole muscles or the different collections of fibres, the tunica Arachnoidea &c. Others can be easily split into Laminæ – as the coverings of the Glands; the skin where it lies over fat; the hard covering of the Aorta, & the penis-tum; together with the hard bag which contains the Corpora cavernosa penis. Air may also be easily blown into the uniting coats

the Stomach &c when what appeared white
solid, will appear like cotton. —
2dly Water separates many parts seemingly
solid into Laminæ & these into threads. —
3dly The cellular membrane is converted from
a spongy to a solid state by encysted lu
mours. — This has been often seen in the
thyroid Gland & in those which accompany
the Oesophagus. — If therefore you can expel
the Vapour, moisture or fat which keeps
the Cells asunder, the cellular parts will
become Membranous. — If then the cellular
tela forms membrane; if this convoluted
forms vessels, & these viscera & glands, its
importance in the plastic process must
be very great. — Ligaments spread out into
a membranous Aponeurosis, which shows
their affinity. — Cartilages of the ribs in
a boy may be split into cellular Laminæ
& the Cellular Membrane grows some
times Cartilaginous. —

Some think bones proceed from the pen
lenum - this at least is certain - viz their
Epiphyses are full of cells which differ in
hardness only from the Vela. -

The Muscular fibre & Medulla diff
from it. - Ruysch, Duverney, Santorinus
Pitcairn & Boerhaave have affirmd that th
whole body is compos'd of Vessels - This is the
process. Earth & glue form the simple fibre.
This uniting several together & condensing them
makes the first or most simple Vessel. These
Vessels interwoven makes the Membrane. The
Membrane properly folded makes the Vessels
which first becomes visible - Hence the rest.
To this Albinus, Cheselden & Haller object, 1st
After the best injection, the greatest part of the
surface amid vascular rete, continues white
& this part by maceration falls to the bot-
-tom under the name of Mucus.

2dly Many Membranes have no Vessels as the Allantois, the Trachoidea, the Epidermis.

3dly Membranes every way like true ones arise perfectly free from Vessels, as in Hydatids, the Ligamentous Laminæ of the Lungs, & of other Viscera.

4thly Vessels make a very small part of the Medulla Cerebri, the bones & cartilages: & seem to have no existence in the Polypus tho' it has been accurately examined by the most powerful Glasses. –

But these arguments suppose no vessels to exist where our injections cannot penetrate, or which our Eye cannot discover – What then is to be said of those minute insects which can hardly be seen in the aggregate? –

231 - Fat is not found in very young Fœtuses. There is only a little water which can be evaporated - mixed with some oil. It is glutinous & reddish - Infants become fat than Adults before these reach their 40th year. There is no fat in the Brain, unless the Pineal glands (as Ruysch thinks) be fat. The brain of some fishes swim in oil. - Where the thigh is united to the nates, this also wanting, & between those broad muscles which undergo perpetual friction - as between the rectus & crural the Gastrocnemius & Soleus. - Likewise in the external skin of the epillitium; in that part of the neck which the platisma myoides plays on; in the Eye Lid & in general wherever there might be danger of compression as in the Lungs, Brain, or where acute feeling was necessary as in the Glans penis, Clitoris; where the

vessels are small, the muscles few, is in small quantity tho' the function be perpetual: but where the muscles are large as in the anterior parts of the Abdomen, the anterior & superior parts of the Thigh & before the breast, it abounds - More especially still in the Glutæi muscles, which by their prominence distinguish man very remarkably from his Thinnoman the Ape. -

In the Mamma it produces a beautiful Effect - It fills the bottom of the orbit of the Eye - it covers the palm of the hand & sole of the foot, but is there confind to its cells very accurately - finally it fills the cavities of many bones, - It is placed on the outside of many organs as the heart, kidneys &c. -

In the living animal, this fluid as may be seen in Dogs &c. - In whales the spermaceti communicates

by Cells from the head along the whole body. - Anson says that in the Seal, he has seen it undulate like water. It resembles oil in the Porpoise -

Granivorous animals as the horse have harder - Aristotle has observed that it is even brittle in ruminant Animals - Is it not so in Scotland? Cardanus says the scotch fat does not concrete. - In man it is often found hard after death - sometimes during life as in Steatoms & many subcutaneous tumours. -

The fat of the Seal melts with so moderate a heat that it does not affect the human hand; whereas the human fat does not melt with the greatest heat of Summer unless putrefaction has begun. -

The Chymical Analysis of fat gives some water - much inflammable oil, an

empyreumatic, austere & acid Liquor, so 234
that retains some resemblance of milk, hyde
or Butter. Some have found 7. 8ths of oil,
some 15. 16ths in fat or suet. –

Rhades on distilling some fat got a
empid liquor; a thick oil; a fluid oil;
then a Volatile, fuliginous, empyreumatic
acid Liquor to the amount of 14℥ from ℥XV.
It was tasted; made the Syrup of Violets
green, effervesced with Alkalis & produced
with them such Crystals as arise from
Salt of ~~Hartshorn~~ Amber & Hartshorn. The diff.
parts of Distillation being distill'd anew
yielded more acid Liquor, so that the quan
tity in the whole is calculated to be as
121. to 768. – There is no Volatile Alka
li. – The acid is stronger than any Vinegar,
but differs from every other acid, inasmuch
as it easily forms ~~crystals~~ a Salt like Sal Ammo
niac. –

Oil of Olives is coagulated by Spt. of Nitre So fat formd in Animals also by an acid coagulating the oil? Is this the reason that herbivorous are fatter than carnivorous animals? –

The fat is containd in oval cells with blind ends annexd to the Arteries, but how is it produced? Malpighi says, by Glands. Others have describd the follicles & their excretory Ducts. –

Haller is confident that every artery trunk as well as Branches have many pores or imperceptible Ducts that communicate with the Cellular Membrane. After death, water, melted Isinglass, or fat passes readily from injected arteries into the Cellular membrane, tho' the Veins have not been tied. – The principal Difficulty in injecting is to find a fluid so subtile

as to penetrate the minute branches of Arteries without passing off into the Cellular Membrane. – Air passes with difficulty, but blown into the Coronary Arteries, it dilates the surrounding Cellular Membrane. – Mercury too can be push'd this way. – Even blood is sometimes forced out, as in hanged persons, who sometimes show red Lines about the Stomach & Intestines along the course of the Arteries. – In peripneumony the Effusion is still greater. Petechiæ are nothing else. Leghorn has observed the Omentum full of bloody streaks. – Animals have sweated blood after violent running; The Arteries communicate immediately with the Cellular Membrane – Some have seen Drops of fat fall from a wound. others have seen it floating in the blood of frogs, others mingled with scorbutic blood,

237 - Animals fatten very quickly - Bullocks & Larks in a Day - Swine in 3 days as is said of Boys after Diseases, very quickly. -

Rest of body tranquillity of Mind contribute to fatness. Bleeding & castration by diminishing the animal powers. Swift grew fat when he became an Idiot. - Milk fattens quickly. -

Veins communicate with the adipose cellular Membrane as well as Arteries. -

As animals soon acquire, they soon also lose their fat, as the Lark, but especially the Moth who leaves a tree, fat & plump yet is a Skeleton before he can mount another. Motion & even friction greatly diminishes it - Haller says the muscular motions drive it into the Veins, but this is probably wrong.

When horses from severe riding, grow suddenly lean, their faces are covered w.th an adipose coat, their blood is full of the same matter, & sometimes coagula of it are found in the Abdomen.

Fat is suddenly absorbd in varicous fevers & is thrown out by sweat, urine, faces &c. – a kind of pellucid Jelly is found instead of it. –

What is the use of fat? 1st To lubricate moving surfaces, & prevent at once cohesions & rigidity. Leyserus & Hunter formerly now deny this use. –

2dly It fills up intervals in the body, in this way increasing its beauty. For want of it the eye after fever is hollow, the cheek ghastly &c. –

3dly It makes the skin pellucid & lovely. Those parts are whitest which have most of it as the Mamma. –

4thly It defends the surface against cold, & particular parts as the Glutei against pressure. –

5thly what is the use of that which is reabsorbd? Does it promote nutrition? This is very doubtful. – In fevers where the absorption is greatest, the body is very little nourishd. Are the sleepers lean on the ~~starving~~ approach of Spring? Doubtful. –

6thly What is the use of the Marrow? It penetrates some way or other the bones & diminishes their brittleness. – Does it nourish them? Uncertain. – perhaps too it may transude thro' the cartilaginous crust of the Epiphysis & mingling with the Liquor of the bone increase its oily part. –

There may be too much even of a good thing. An adult may safely have 8 pounds of fat – but some have had much more.

Demetrius when a captive ate much & took no exercise, & died with fat. — The Medium weight of a Man is 160 pounds but some have reach'd 600. An ox has sometimes weigh'd 2800 which is half the weight of an Elephant. — A Boy 5 years old once weigh'd 250 lib — Six inches of fat were collected below the Skin, & Dionysius was obliged to be awak'd by long needles, for he did not feel superficial pricks. — Buffon saw mice nestling in the Lard of a Sow, & Sarro saw one whose skin was 15 Inches distant from his bone. — The nerves of the adipose Membrane are few, chiefly distributed on the skin below, & are besides overpowerd by the Pressure of surrounding fat. — What are the chief evils produced by fat? 1st It diminishes Sensibility — 2dly It separates

the muscular fibres, & thus diminishes their contractile force, & in the end destroys it. A man who weighed 500 lb could hardly move.
2dly It diminishes the quantity of blood, both by consuming much of it, & by compressing the veins. Fat people faint most readily & are coldest in the extremities.
3dly By compressing the Jugulars, it obstructs the return of the blood from the head, & produces somnolency & apoplexy. It impedes perspiration & sometimes disturbs or destroys the motion of the heart itself. –

Vasa. — 242.

The Arteries were by the Ancients called Vena quæ pulsant. Aristotle mentions the vessels as being one set of Veins & he calls the Aorta itself the Vena minor. The word Artery was at length introduced, because they were supposed to carry air. The section is circular. Why? Is it from the equality with wh. the fluid presses on every part? If a tube be every where equal as to consistence & external pressure, then a fluid pressing equally will certainly produce a circular shape. But the Arteries are sometimes ~~surrounded~~ loaded with a great weight of parts, as the Aorta in the Loins & Breast, sometimes is cav'd in bone. Why is there no variety in shape? And why does not the suppos'd uniform pressure

produce a similar shape in the Veins some of which are triangular curvilineal. Not only the artery but even Aneurisms are circular.

Arteries are commonly call'd converging Cones, the base of wh. is the heart, & their a-pex, the termination in a particular part. But the diminution of an artery depends lesson its distance from the heart than on the branches it gives off, so that, there is no perceptible diminution where an Artery runs far without giving off Branches. The umbilical Artery is rather wider in the Cord than when it enters the Abdomen; the Carotid is equally wide near the upper corner of the Thyroid Carti-lage, & in the pericardium. Altho' the verte-bral gives off many branches, yet is it very little diminish'd. The Aorta in the Thorax,

the humeral, radical & mammary arteries show the same thing — An artery then is rather a collection of Cylinders, two of wh. are filled to each other at every coming off of the Branches, & the uppermost is the largest. — There is always a degree of dilatation above the divarication of Branches. — Some arteries, particularly at their windings, are larger, when more remote from the heart. The Splenic, Carotids, & Vertebrals are examples of this, & it may arise from the pressure of ye blood wh. is somewhat impeded by the angle. — The Spermatic artery is dilated in the same way — especially in the hog. — The small arteries of the viscera are universally larger than their parent branches — There are large Sinuses in the Aorta, alternate tumours in that of the mexican Boar, & one like an aneurism in the Mesenteric Arte

-ry of a Horse. -- The larger Arteries are whitish, the smaller ones red. --

Every Artery has a coat of cellular Substance, which binds it to the neighbouring Viscera, Vessels, Membranes & Periosteum. In the larger Arteries, tis of a looser texture, so as in some places to acquire the name of Vagina. There is another fold of the cellular membrane which adheres closely to the Artery.

Its next coat is muscular, consisting of fibres circular, but not spiral. - These fibres do not arise continuous from the heart, & are connected with it only by cellular Membrane - Are there any longitudinal fibres? Some say they have seen them, & alledge besides that an Artery when cut contracts its length. -

There is another portion of cellular Membrane between the muscular coat & the inner Membrane, & in it, that yellow juice which pro-

-duces first callus, then bone, is found out. The inner coat is call'd nervea, continuous & similar to that of the heart. – The fleshy fibres tho' strong, not being continuous, would not have sufficiently prevented dilatations, but for this, & as 'tis smooth it prevents adhesions. – Polypi adhere chiefly to the internal coat when 'tis broken.

At the beginning of each ramification there is a double arch, the upper one concavely plaid to the tube of the Artery & of the branch, the other ~~one~~ farther removd from the heart, rises up & is fill'd with circular fibres. Hence there is greatest strength & thickness at that part; hence regurgitation is prevented; & that blood only wch has recevd impulse from the heart, can enter the branches. – The semicircle is the more eminent in proportion to the acuteness of the angle at wch the branch rises. – –

The irritability or contractility of Muscles is well-known. But thó an artery, its diameter is little diminish'd, cut a vein, it instantly col-lapses. - An artery 27 lines, 7 tenths long, when cut, contracted itself into 12 Lines - The same could be extended to 55 Lines, before it broke. An artery irritated by a knife or by a weak stimulus, contrary to what happens in a mus-cular fibre, does not contract. With a strong cur indeed it does, but not uniformly in a living & sometimes in a dead creature. Their contrac-tility however is proved, 1st By their compres-sing strongly, a finger introduced; 2dly If an Ar-tery be tied, it will throw out blood w. vio-lence even when the heart rests; 3dly When wounded, tho said sometimes to have thrown out blood with more force during the systole than in the diastole (rarely & contrary to Haller's Experience. — —

4thly An artery empties itself between 2 Li-
-gatures.

5thly Tho' you tie the Aorta, even tho' the heart be cut out, it will empty itself into the veins.

6thly You can see the alternate sinkings & swellings of the Artery. —

The Trunks of the Arteries are generally thicker & consequently were believed to be stronger than their branches. — Clifton Wintringham threw condensd air into different arteries — Their thickness & diameter being known, together with the quantity of air employd, he calculated their relative strength. —

The Aorta has the ninth part of an inch of thickness & its specific gravity is to water, as 106 to 100. and in an old man as 1098 to 1000, in an old ox as 1086 to 1000, in an old hog 1084 to 1000 in a young Dog as 1059 to 1000. —

In a young man the Aorta near the heart was broken by force of air equal to

249 ~~to 131 lb. 10 oz~~ to 119 lb. 5 oz. & lower, by
air equal to 131 lb 10 oz – so that it became
stronger in its progress in the proportion of
1794 to 1000. In a Hog, near the origin of the
Coeliac artery, the strength of the aorta, was to
that of the same at the Iliacs as 1000 to 1712.
Near the renal arteries of a Ram, it was
when compared to the Iliacs as 1000 to 1112,
& that of the Iliacs to that of the aorta near the Emulgent
arteries as 1897 to 1000. – The strength of the ca-
-rotids is very great as in a small Dog they
required 25 lb. 71 hundredths to break them
& in a man 30 oz of ~~7~~ broke the inner
membrane only. – The splenic artery of a
man bore 41 lb. 8 oz. & its strength was to
that of the Aorta as 1319 to 1000, & in another
Expt. as 1302 to 1000. The strength of the
renal Artery was to that of the Aorta
as 51 to 40.

The arteries are sufficiently strong everywhere, but the strength is in an inverse proportion to their hardness — Universally the Trunks are weaker than the Branches — & those destined for secretion are the strongest. The concave is said to be less firm than the convex & the arteries of the feet harder than the rest. —

Aneurisms are most frequent in the Arch of the Aorta, because there the blood strikes with the greatest force. —

The branches of the Aorta are harder than it, therefore they resist the heart more; but they have greater diameters & thinner membranes wherefore they are distended with a greater column of blood in proportion to their thickness. —

Arteries are found every where except in the membrana arachoidea cerebri & medulla spinalis, in the Epidermis, the nails, & hair except the Bulb, & in the Membranes of the Um

=bilical Cord. They can be traced in the junction of the Epiphysis to the bone, & branches can be discovered running into the Cartilages in younger animals. – The arterial course is directly contrary to that of the Veins – The small short branches only run superficial, their trunks are all deep-seated. – Where therefore the Veins are smallest the accompanying arteries are largest, & vice versa. –

The diameters of all the Arteries in any set of branches exceed that of the Parent Trunk in a very great proportion – More than the 20th power of 3 exceeds that of 2. –

In observing the angles which the Branches form with the Trunk, the Cellular Membrane must not be removed, otherwise what are acute will often appear right, may sometimes other Angles. –

Many Arteries pursue a winding course, tho from their situation you would not expect it. Thus the Tibial, Ulnar, plantar, radial &c. others wind that they may accommodate them-selves to the varying position of different parts. Thus the Coronary Arteries of the Lips, those of the Uterus, of the Intestines, especially the thick of the Iris & of the Umbilical Cord. – The splenic, Lingual, gastroepiploic & bronchials are examples of the same thing. In all distention or motion produces such variety in the relative position of the Arteries as requires to be humoured by their situation. –

Terminations.

The first is in Veins. Of this the Ancients were in great measure ignorant. They supposd a spongy mass of blood interposd between the Arteries & Veins wh they called Παρεγχυμα. Phlegmon they attributed to the blood's leaping out from

 the arteries to the veins. Bauhinus taught that they were joined by obvious Anastomoses. At length Leuwenhoeck discovered in the tails of fo-es arteries ending directly in veins. - Sometimes an Artery runs parallel to the vein, & sends into it a number of small Branches which in this man-ner carry back the blood to the heart. In almost every part of the body, the veins can be & have been injected from the Arteries - But can the reverse happen? - sometimes - Quick-silver poured into the Thoracic Duct, fills the veins of the brain & the Arteries of the Pia Mater. An injection pushed into the Vena Portarum goes sometimes into the Mesenteric Arteries, or into the hepatic Venous Injections however do not generally succeed. Why? If the Syphon be in a large trunk, the Valves resist, if in a small Branch, the sides yield too easily, whereas the small

arteries resist more - Besides the numerous Anastomoses steal away the Injection. -
But does not an injection easily pass out into the Cellular Membrane? Yes, such as Isinglass dissolved in Spirits, melted hog's Lard or fat impell'd with too much violence. -
Blanchard thinks the blood goes out not only into the Cellular Membrane, but even into the Muscles returning from thence into the Veins. Quod minum. -

As in those animals which show both Arteries & Veins to the Eye, no thick substance is interposed between them, so in man there is nothing. - There is still a great Portion of substance which no Injecting Liquor can enter, whether that be Cellular Texture or Vessels too small to admit Injections. -

The small Arteries the join the Veins are hardly visible to the naked Eye, but they

are considerably larger than the Globules of Blood.

2dly The next Termination of Arteries is into Excretory Ducts, which carry a fluid diff.t from the blood & convey it not into ~~into~~ the common Mass. Their origin from an artery was never yet seen, either because their diameter is smaller than the little Arteries, or because their contents being colourless makes them less discernible.—

Water, air or melted fat however can be thrown from the emulgent Artery into the ureter, which must be tied whenever one wishes to fill the kidney with accuracy.— Quicksilver swallowed by a living man, has passed off by urine. Injections either from the artery or Vena Portarum have passed into the Ductus Bilarii. The same thing has been done to the Ductus salivales et pancreatici, Ductus sebacei, & vasa Lactifera Mammæ.—

Nature herself points out this origin of the Excretories, for they often pour out blood without rupture, which is known by the good health otherwise & by the proper secretions being restored soon. - Bloody urine has frequently been critical - Milk has been often mixed with blood - The menses have been discharged from the Eyes. - The bite of a serpent, the Yellow Fever, the strength of certain poisons & a variety of other causes have been assigned for the production of hæmorrhagy, from excretory ducts, & hence clearly appears the probability of their arising from the Arteries.

3d. Is into Exhalants - These are short simple vessels ending with open mouths in the different Cavities. Some of them carry blood as into the spongy fabric of the papilla, clitoris, penis, the subcutaneous Cells of the Dewlap of a Guinea Hen, & Crest of a Cock.

257 Put a Tube into the Cava near the heart
Drive cœrulean water into it with force, & it will go
-to the heart & into the pulmonary artery, & the
whole spongy texture of the Lungs will be be
-dewd with a blue moisture, which will
come out from the aspera arteria, frothy &
full of air. A similar effusion of blood takes
place in the worst kind of Peripneumony.

Other Exhalants open into different cavi
-ties. Hence vapour rises on opening a crea
ture soon after death - or water is formed. Tis
coagulable, but at same time so penetrating
as to dispolve Ancyloses. 'Tis often lung'd w.
blood in the pericardium & abdomen - the last
uniform in a fœtus. - A thin liquor injected into
the Arteries of the Stomach & Intestines goes
more readily into these Cavities than into the
Veins. - Not to mention innumerable hæmor-
-rhages which alternate with or relieve dis-
eases, the menstrual flow is of itself a suffi-

-cient Example of vessels pouring out blood at one time & not at another. Wax too has been found in the extreme villi of Arteries. —

The cutaneous exhalants have been long known. They are vessels continuous with the cutaneous Arteries, covered by the Epidermis wh being impervious after death is raised by water or Isinglass injected into the Arteries of the Lounts or the Aorta. — Blood has been oftner than once found out into the space under the skin nay thro' the skin itself under the form of bloody sweat. —

The last kind of exhalation is into Glands. Injections imitate this. From irritation sometimes coagulable Lymph, sometimes blood is thrown into them, which Events happen to the Exhalants elsewhere. —

259 Do the Arteries terminate in Lymphatics, absorbents? Haller says yes, Monro, no. The Lymphatics have been filled from the red Arteries in the Spleen, Kidneys, Lungs, Liver &c. The origin of the one from the other has been detected in the Uterus of a Cow. The Lymphatics or lacteals carry lymph whenever they can find no chyle – therefore their being filled with Q. Ol. Terebinthinæ & C. from the Mesenteric Artery is a proof of their origin. But is not the matter found out beforehand in the ruptured Cellular membrane? Haller could perceive no such thing. The Lymph even in the Thoracic Duct is sometimes red – But this may be owing to the absorption of extravasated blood.

The ~~Exhalant~~ arteries terminate in others so small as not to admit red Globules. –

These in the adnata are invisible till inflammation calls them forth to view - The ciliary Arteries can be injected. Lewenhoeck discovered arteries not only smaller than a red Globule, but 200,000, times smaller than a hair. - Inflammation has shewn arteries in the cornea, in the membranes of the Thorax & abdomen, & in the Brain. -

Error Loci. The small arteries were supposd to be greater at their mouths than in any other part - hence they allowd a red Globule to enter, but not to proceed. - The more it was impelled, the more firmly it was impacted, & must either be broken down or forced back. A mere laxity of the Vessels may admit a red globule, tho' there be no increasd impetus a Tergo. A red globule according to Lewenhoeck was broken into 6 yellow ones, & these again into globules 36 times smaller

than the red ones. Hence he supposd there was a Series of Vessels decreasing to an in-finite degree. Hence inflammation was produced not only by blood getting into serous cavities, but by the yellow lymph of these getting into the transparent vessels, as in the yellow Erysipelas &c. —

There are undoubtedly vessels much smaller than the ordinary terminations of the Arteries but they by no means prove an error Loci. Vessels filled for receiving red globules, if they receive them singly will still appear pellucid. — Besides the phenomena of ordinary inflammation do not perfectly accord with error Loci. In the finger ex. gr. or in the stomach you do not find vessels turgid with blood & spaces between them free from inflammation (as in the Eye), but one uniform red mass.

Besides a Ligature on a Trunk or obstruction of a Branch produce no inflammation - There is a Tumour, but it quickly subsides; the blood flows into the neighbouring Vessels & the part unites.

Once more: obstructions have often been actually observd in different vessels of living Animals, without producing Inflammation. A Coagulum of blood, or white matter from a wound has shut up both Arteries & Veins. Sometimes it has been washd out by the fluid blood & escapd by a wound. At other times it rests & attracting blood increases in size; or if the matter be not blood, then the stream either passes thro' it or ceases to flow, seeming to recoil towards the heart, without at all dilating the obstructed Artery, or producing any sign of Inflammation. —

But the vessels decreasing in an indefinite series is fiction all. If they did this ought

to follow. It will be more easy to inject a red vein than a yellow artery, & still more than a pellucid Lymphatic; but the fact is that Injections more readily into the pellucid Vessels than into the Veins, & are effused into the adipose Membrane, into the Cavities of the Stomach, Intestines &c. Now before they can reach these, the Injections must have passed thro' the minutest of that series of vessels, the largest of which is smaller than a red Globule.

Besides the blood plainly flows into pellucid Vessels of the Intestines, Kidneys, &c. tho' there be no rupture nor injury. The way therefore from the red Arteries to all the excretory Ducts must be short & easy.

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fore
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